REPORT OF THE

SAN FRANCISCO
PUBLIC UTILITIES COMMISSION

FISCAL YEAR
1948-1949

WATER DEPARTMENT

HETCH HETCHY WATER SUPPLY,
POWER AND UTILITIES
ENGINEERING BUREAU

BUREAU OF LIGHT, HEAT AND POWER

SAN FRANCISCO AIRPORT DEPARTMENT

MUNICIPAL RAILWAY

Compiled Under Direction
of the
PUBLIC UTILITIES COMMISSION
by
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Director
BUREAU OF PUBLIC SERVICE

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SAN FRANCISCO

REPORT OF

PUBLIC UTILITIES COMMISSION
CITY, COUNTY OF SAN FRANCISCO

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FISCAL YEAR 1948-1949

ELMER E. ROBINSON
Mayor

•

COMMISSIONERS

PHILIP F. LANDIS
President

SAM McKEE
Vice-President

DONALD A. CAMERON VICTOR S. SWANSON
EDWARD B. BARON

•

J. H. TURNER
Manager of Utilities

•

FORREST B. GIBBON
Secretary to the Manager

•

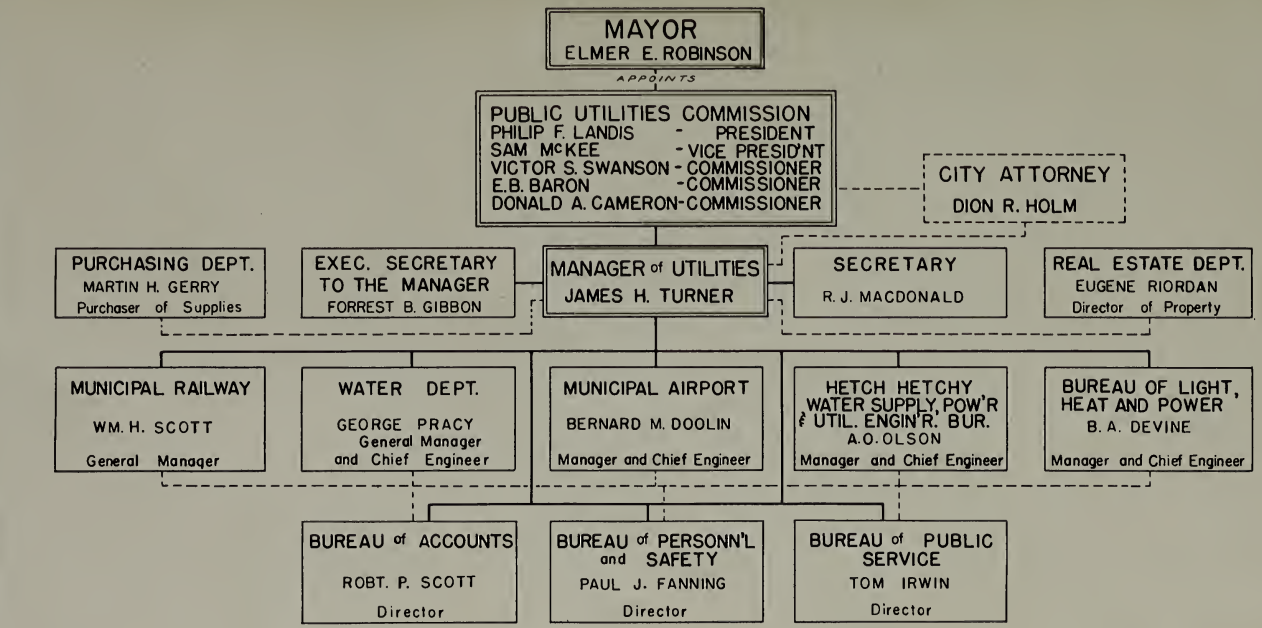
R. J. MacDONALD
Secretary to the Commission

PUBLIC UTILITIES COMMISSION AND DEPARTMENT HEADS

Back Row: Left to right: Paul J. Fanning, Director Personnel and Safety; Forrest B. Gibbon, Executive Secretary to Manager of Utilities; Tom Irwin, Director of Bureau of Public Service; R. J. MacDonald, Secretary to Commission. Center Row: Edward B. Baron, Commissioner; Victor S. Swanson, Commissioner; Philip F. Landis, President of Commission; Sam McKee, Vice President of Commission; Donald A. Cameron, Commissioner. Bottom Row: Robert P. Scott, Director Bureau of Accounts; B. A. Devine, Manager Bureau of Heat, Light and Power; W. H. Scott, General Manager Municipal Railway; James H. Turner, Manager of Utilities; A. O. Olson, Manager and Chief Engineer Hetch Hetchy; A. Dal Thompson, Commission Counsel, and George Pracy, Manager and Chief Engineer Water Department.

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

ORGANIZATION CHART



SEVENTEENTH ANNUAL REPORT OF THE SAN FRANCISCO PUBLIC UTILITIES COMMISSION

The Public Utilities Commission of the City and County of San Francisco, pursuant to authority granted by the Charter, has control of and jurisdiction over the construction, management, maintenance, extension and operation of all public utilities owned, leased or used by the City and County of San Francisco.

These utilities are the San Francisco Water Department; the Hetch Hetchy Water Supply, Power and Utilities Engineering Bureau; the Bureau of Light, Heat and Power; the San Francisco Airport Department; and the San Francisco Municipal Railway.

The combined physical properties required to operate these various utilities owned by the people have an appraised value of $263,617,666, and require an annual operating budget of nearly $45,000,000, the major portion of which is obtained from operating revenues.

A brief resume of the operations of the several departments and bureaus for the fiscal year 1948-49 follows:

SAN FRANCISCO WATER DEPARTMENT

The San Francisco Water Department, during the past fiscal year, entered its twentieth year of operation, having taken over the former Spring Valley Water Company March 3, 1930. During the period of municipal operation and management of the system the gross revenues from water sales increased 56 per cent and the daily average water consumption increased 95 per cent.

SALES

Water sales in 1948-49 totaled $10,932,354, an increase of $317,777 or 3 per cent above the previous year. Of this total, sales within the City amounted to $9,307,267, or 85.2 per cent of the total. City sales were up $125,546 over the previous year. Suburban sales were up $192,231 making a total of $1,625,087, or 14.8 per cent of all water sales.

Active accounts during the year increased by 2,078, bringing the total number of accounts to 143,221.

CONSUMPTION

Water consumption averaged 103.2 million gallons daily for the entire system, an increase of 2.2 million gallons daily over the preceding year. Of this, an average of 83.3 million gallons was used in San Francisco each day, while suburban consumption averaged 19.9 million gallons daily.

Peak consumption for a single day was June 3, 1949 when consumers used 138.3 million gallons. Lowest daily use was February 13, 1949 when only 73.3 million gallons were used. Based upon unofficial estimates of population in the area supplied by the system, the per capita consumption was 102.27 gallons per day.

SOURCES

Rainfall for the past several years having been below normal, it was necessary during the year to draw upon the Hetch Hetchy mountain supply for the full delivery capacity of 60 million gallons per day. In addition, the Department drew upon the reserve supply in storage in the peninsula and in the East Bay reservoirs. For the first time in several years it was necessary to operate the newly rehabilitated Pleasanton Wells; operation continued for a period from February, 1948, to April, 1949.

Further use of reserve storage will be avoided within eighteen months when additional transmission capacity from the mountain supply will be available.

CONSTRUCTION

The second section of the Sunset Supply Line from Baden to the Sunset Reservoir was completed, making possible increased delivery by gravity from San Andres Reservoir on the peninsula to the Sunset Reservoir. This line will ultimately have three sections and at that time will take care of transmission requirements from the peninsula to the City for some time to come.

Plans and specifications for Bay Division Pipeline No. 3 were about 85 per cent complete at the end of the fiscal year. This line, to be laid around the south end of the bay, will increase delivery capacity from the East Bay to the peninsula by 76 million gallons daily.

PERSONNEL

January 1, 1949, George W. Pracy was appointed Manager and Chief Engineer of the Department, succeeding Nelson A. Eckart, retired.

The Department had 547 employees during the year, of which 58 were temporary.

HETCH HETCHY BUREAU OF WATER SUPPLY, POWER AND UTILITIES ENGINEERING

This triple-function bureau involving water supply, power production and furnishing of engineering services to utilities is geared to the operation of other utility departments to such an extent that much of its work is reflected in the reports of these other departments. For that reason, most of its report deals in detail only with those activities which are under its jurisdiction from start to finish.

WATER SUPPLY

Heavier precipitation than was experienced in the previous year, although still below normal, made it possible for the Hetch Hetchy mountain water system to supply water to the Water Department at the maximum delivery capacity of the transmission pipeline across San Joaquin Valley. This amounted to an average of 61.2 million gallons daily.

This delivery capacity was in the process of being increased by the construction of San Joaquin Valley Pipeline No. 2. Work on two sections of the pipeline actually got under way during the year and plans and specifications were nearly ready for letting bids on the third section. Completion of the three sections will enable the delivery capacity to jump from approximately 62 million gallons daily to 87 million gallons per day. The fourth section, when built, will complete the line and double the present delivery capacity.

Bids were let for the installation of drum gates at O'Shaughnessy Dam which will raise the level of Hetch Hetchy Reservoir by 10 feet and increase its capacity by 20,000 acre feet.

CHERRY VALLEY

Some nine years of preliminary work on the Cherry Valley Project was just about to pay off to San Francisco at the end of the year. This project, calling for a dam across Cherry Valley near Hetch Hetchy Reservoir, would increase the City's water storage, thereby insuring an adequate water supply for years to come as well as protecting the City's revenues from power sales.

While not yet approved at the end of the fiscal year, contracts between San Francisco, the Army Corps of Engineers and the Modesto and Turlock Irrigation Districts lacked only formal approval. Under these contracts, the City could obtain $9,000,000 from the federal government to build the dam while putting up only $4,000,000 of its own money. Plans were made to submit a bond issue to the electorate for this purpose.

While there are many ramifications to these contracts, all parties concerned seem satisfied that their individual interests could best be served by such joint action in developing the Cherry Valley Project.

POWER

The generation of electric power by the City at Moccasin Powerhouse was curtailed for a few months during the year during reconstruction of two of the generating units. To keep this loss of generating capacity to a minimum, only one generator was repaired at a time.

HETCH HETCHY RAILROAD

This historic railway, built by the City during early construction days of the Hetch Hetchy System, was ready to pass into oblivion. Too expensive to operate any longer for only limited use, it was put up for sale and removal. One bid during the year was inadequate and direct negotiation for its sale was begun.

ENGINEERING

As usual, the bureau did all the engineering for the Municipal Railway and the San Francisco Airport.

SAN FRANCISCO INTERNATIONAL AIRPORT

The amazing postwar growth in air freight highlighted activities at the Airport during the year with a 99.9 per cent increase in poundage of air express-freight handled.

While making no spectacular gains, passenger volume continued its steady rise by 3.2 per cent. For the second year, more than a million passengers utilized the Airport.

CONSTRUCTION

The expansion program at the field came along steadily, even though a proposed bond issue for building the new administration building and passenger terminal failed of passage. From previous funds, however, much construction work on the field itself, such as drainage, conduits, etc., was accomplished. One

completely new runway 6,500 feet long and 200 feet wide was built and put into service.

A new concourse was built which doubled the existing loading gates for aircraft, thereby speeding up embarking and disembarking of passengers. The Airport now has twelve passenger loading gates and two freight loading gates.

With the opening of the new Bayshore Freeway which skirts Airport property, the old Bayshore Highway which bisected the property was ceded to the City.

A new and larger parking and storage area for private aircraft was made available to private pilots, even though dust from construction worked a hardship on these airplane owners. Understanding that this was unavoidable until construction work finished, the Aircraft Owners and Pilots Association awarded its "Certificate of Merit" to the Airport with a rating of "superior."

SERVICE

For the first time in its twenty-two-year history, the Airport had professional fire fighters on hand for emergencies. A company of the San Francisco Fire Department was assigned to the field to be available at all times. The fire marshal promptly worked out emergency plans for the entire field which have been set up as standard operating procedures.

In order to supply sufficient space for the vital functions of the U. S. Weather Bureau, a new annex was built to the existing Weather Bureau section of the terminal building.

The number of scheduled airlines serving the Airport was increased to thirteen during the year, thereby making it even more convenient for San Franciscans to travel by air.

A new type of airline, operating intrastate under jurisdiction from the State of California, set up air service between California cities at rates competitive with ground transportation. This cheaper air travel was extremely popular with the public.

IMPORTANCE

Public interest generally in the Airport and all phases of aviation was demonstrated when some 80,000 persons attended an "Air Fair" in October, 1948, which was sponsored by the Airport and staged by the San Francisco Junior Chamber of Commerce.

Economically, the Airport gradually is assuming more and more importance in the economic life of the community. Private payrolls at the field now total $23,000,000 yearly. The aviation industry in this area, centered at San Francisco Airport, is already among the top industries in Northern California.

BUREAU OF LIGHT, HEAT AND POWER

New construction completed in 1948-49 was valued at $289,682 and brought the total investment in city-owned street lighting to $2,040,135. Of this total investment, only $1,301,475 was expended by the city, the remainder being acquired from federal agencies or by deeds of property owners.

The number of city-owned lights increased from 934 in 1932-33, when the department was first established under the jurisdiction of the Public Utilities Commission, to 4,897 in 1948-49.

In addition to the 4,897 lights owned by the city, there were 19,130 lights owned by the Pacific Gas and Electric Company and 2,136 jointly-owned lights, or a total of 26,163 lights in service. These lights were maintained at a cost of $32.83 per year as compared to $43.93 in 1932-33.

The major projects which were completed during 1948-49 included new lights on Guerrero Street from Market to Army Street; on Third Street from Custer Avenue to Bay Shore Boulevard; on Seventh Street from Mission to Townsend; and replacement of old arc lights with incandescent bulbs in the "Path of Gold" on Market Street from California and out Hyde to Civic Center.

Engineering and inspection service has been furnished to many city departments. Typical examples include services to the Park Commission for installations at Fleishhacker Pool and for floodlighting at Kezar Stadium; to the Recreation Commission for lighting playgrounds and recreational centers; to the Bureau of Architecture for various interior lighting plans; and to the Municipal Railway for overhead and switch control design at its new trolley coach shop.

The Bureau made frequent surveys of gas and electrical consumption in various municipal operations with a view to effecting economies in application of rates. Exclusive of street lighting, the city used 7,757,257 cubic feet of natural gas and 141,132,816 kilowatt-hours of electricity during the fiscal year.

MUNICIPAL RAILWAY

The fiscal year ended June 30, 1949, marked the completion of thirty-six and one-half years of continuous operation of the Municipal Railway.

CONVERSION IMPROVEMENTS

On the many lines that have been converted from street car operation to motor coach or trolley coach operation, most of the headways have been shortened about 50 per cent, and the increased vehicle frequency has resulted in a great saving in waiting time to the riders of these lines. Another great improvement is the increased seating provided, which amounts to a 75 per cent increase during peak periods.

Of the 497 motor coaches and 248 trolley coaches operated, the major number of vehicles are new and of the most modern type.

NEW 48-PASSENGER TROLLEY COACHES ON ORDER

On August 10, 1949, the railway prepared a requisition for 50 additional new 48-passenger trolley coaches which, upon delivery, will bring the trolley coach fleet to 298 in number. Passenger-carrying vehicles owned by the railway as of June, 1949, include 347 electric cars, 27 cable cars, 497 motor coaches, and 248 trolley coaches, a total of 1,119 vehicles.

TRANSPORTATION CHANGES, SERVICE IMPROVEMENTS

The changes made on July 3, 1949, constituted one of the largest single day transit conversions in transit history, involving 14 lines and 146 miles of routes.

The numbers 1, 2, and 3 Sutter Street lines and the number 31 Balboa line were converted from street car operation to motor coach operation, the number 8 Market Street street car line was converted to trolley coach operation, and the outer end of the "H" street car line was changed to motor coach operation. Also on July 3, the motor coach lines, numbers 5 McAllister, 6 Haight-Masonic, 7

Haight-Stanyan, and the 21 Hayes, were converted from motor coach operation to trolley coach operation. Extensions and reroutings were made on the motor coach lines, numbers 20 Ellis, 25 Bryant, and 55 Sacramento.

A partial express service was established on the Market Street street car lines "J," "K," "L," "M," and "N" when all stops west of Twelfth Street were eliminated with the exception of Duboce Avenue, Church Street, and Castro Street.

FARE INCREASE

Because of the greatly increased cost of operation, including wage increases and the increased cost of gasoline, materials and supplies, tire rental, and the service charges for interest and redemption on the outstanding bonds, the railway budget for the fiscal year 1948-49 provided, in addition to the revenues from operation, receipts from tax sources and from surplus railway funds.

The amounts contemplated from the latter sources comprised $293,723 from railway surplus funds, $728,030 from the Use Tax monies, and $1,776,703 from ad valorem tax monies.

In view of the above, after full discussion and consideration and taking into account the inadvisability of effecting reduced operating costs through service cuts, the Public Utilities Commission, on October 11, 1948, approved an increase in the railway fare structure to a straight 10-cent fare, eliminating the 8⅓-cent token rate, an increase in the charge for school ticket rides from 3½ cents to 5 cents, an increase in the fare on the then operated No. 40 San Mateo line from 25 to 30 cents, and an increase in chartered car and coach service.

INCREASED REVENUE FROM FARE INCREASE

From the effective date of the fare increase, January 26, 1949, to June 30, 1949, additional revenues in an estimated amount of $1,216,615 were realized.

GROSS OPERATING REVENUES

Gross operating revenues for the fiscal year 1948-49, amounted to $18,592,096 as compared with $18,321,592 for the fiscal year 1947-48, an increase of $270,514 or 1.476 per cent, which increase is attributed entirely to the fare increase.

As the railway experienced a decline of 5 per cent in revenue passengers carried for the year, which is considerably lower than the experience of the transit industry throughout the country in general, it will be seen that, but for the fare increase on January 26, 1949, the railway would have suffered a considerable loss in revenue under the previous year.

NET LOSS

The net loss for the fiscal year, after provision for accidents, depreciation, and retirement charges, amounts to $2,307,833 as compared with $1,507,837 in the previous year.

While operating revenues increased in the amount of $270,514, due entirely to the fare increase in effect for 5½ months of the year, operating expenses and other charges increased in a greater amount, resulting in a net loss of $2,307,833, or $799,996 greater than the previous year.

Items entering into the increased operating and other costs for the year are noted as follows:

Increased cost due to wage and salary increases of approximately $900,000; an increase of $508,870 for gasoline, less a decrease of $240,109 for electric power;

an increase of $362,470 in the provision for depreciation; and an increase in the provision for accidents of $22,378.

As the net increase in the above items alone total $1,553,609 over the previous year and after taking into account the $270,514 increased revenue, the fact that the increase in net loss for the year is but $799,996, shows that other economies effected have totaled $483,009.

PASSENGERS CARRRIED

The total passengers on cars and coaches during the year were 298,475,999 as compared with 307,975,046 in 1947-48. Total passengers carried during the year by types of service were 135,678,690 on electric street cars, 10,180,954 on cable cars, 133,399,209 on motor coaches, and 19,217,146 on trolley coaches. These figures on total passengers carried, as compared with the previous year, represent a decrease of 67,579,945 for electric street cars, an increase of 287,604 for cable cars, an increase of 8,279,753 for trolley coaches and an increase of 49,513,541 for motor coaches.

Revenue passengers carried during the year by cars and coaches totaled 206,024,423 as compared with 216,788,454 in the previous year, a decrease of 10,764,031.

PASSENGER RECEIPTS

Passenger revenue for the year amounted to $18,456,459 as compared with the previous year's figure of $18,171,522, an increase of $284,937, or 1.57 per cent.

The record passenger receipts for a single day occurred on May 26, 1949, and amounted to $65,780.87.

PERSONNEL

The total number of employees as of June 30, 1949, was 3,593, of which number 2,406 were platform employees, 615 shop employees, 151 track employees, and 421 office and supervisory employees. This is a reduction of 35 employees from the total number as of June 30, 1948.

The labor turnover rate dropped from 63 per cent for the fiscal year ended June 30, 1948, to 26 per cent for the fiscal year ended June 30, 1949, a decrease of 37 per cent. This change may be attributed to several factors, foremost among them being: improved selections, placement, training, and supervision effected by close cooperation between the railway and the Civil Service Commission, and the railway and the Board of Education.

SAFETY

Operating accidents, which include those of traffic, passenger, and certain miscellaneous types, totaled 8,610, which was 1,140 or 12 per cent less than those of the previous fiscal year.

A substantial decrease in employee accidents is worth noting, showing 171 or 18 per cent less than those of the previous fiscal year.

Whereas mileage, which can be considered the exposure factor, has increased 5 per cent, a decrease of 8 per cent was registered in traffic accidents. Passenger accidents likewise show a decrease of 6 per cent, while the number of passengers carried dropped only 5 per cent. In comparing our performance with that of other major transit organizations throughout the nation, there is reason to be proud of the fact that the railway is doing as well as, if not better than, the national averages indicate.

BUREAU OF CLAIMS

The constant efforts of the Bureau of Personnel and Safety, in conjunction with the Bureau of Claims, through personal contact with, and safety education of, employees, have resulted in a marked decrease in accident occurrences during the past year. This tabulation shows a reduction in accident occurrences in 1948-49 of 625, or 5.43 per cent under 1947-48, a decrease of 2,992 or 21.57 per cent under 1946-47, and a decrease of 5,250, or 32.55 per cent under 1945-46.

GENERAL

His Honor, Mayor Elmer E. Robinson, made two appointments to the Commission during the year; Edward B. Baron on January 19, 1949, and Donald A. Cameron on February 1, 1949.

The Commission held 53 meetings, adopted 781 resolutions; awarded 81 contracts for work costing $15,104,297.25 and approved 225 contract payments for a total of $10,256,349.21, which represented the largest year's business in Commission history. Seventy contracts were completed during the year and 8,544 acres of lands controlled by the Commission were placed under lease.

CRYSTAL SPRINGS PUMPING STATION
This station was extended during the past fiscal year.

SAN FRANCISCO WATER DEPARTMENT

G. W. PRACY

General Manager and Chief Engineer

(Successor to N. A. Eckart, January 1, 1949)

G. W. PRACY
General Manager and Chief Engineer
San Francisco Water Department

On March 3, 1949, the San Francisco Water Department began its 20th year as a municipally owned utility; having acquired at noon of March 3, 1930, the title to the operative water properties and other assets of the Spring Valley Water Company. This privately-owned utility up to the time of being acquired by the City, had furnished practically the entire domestic water supply for San Francisco since 1858. During the period of municipal operation and management of the system the gross revenues from water sales increased 56 per cent, and the daily average water consumption increased 95 per cent.

In taking over the ownership and operation of the water supply system, the City of San Francisco at the same time assumed the responsibility and obligation of providing its people with a supply of pure water, adequate at all times to meet the full needs for domestic, commercial and public purposes. The fulfillment of this responsibility and obligation requires that the source of supply be developed or added to continually to meet the growing demands of the communities. It is necessary that the facilities for delivering water from the source to the ultimate consumer be maintained in adequate condition and that increased capacity be provided in the various components of the transmission and distribution systems to keep pace with the ever increasing requirements of our metropolitan area.

The annual report of this year follows the same general outline of previous years in order to give continuity of record and to provide ready reference comparison of operating results from year to year. Following the foreword, a more detailed description is provided of the Department's operations during the year ending June 30, 1949, and this in turn is followed with an appendix and a listing of Organization and Personnel.

Rainfall for the past seven years has been below normal with consequent lessened runoff from watershed areas. Due to runoff deficiencies in local areas, it was necessary during the entire year, to continue to draw on Hetch Hetchy supply sources to the maximum capacity of the San Joaquin pipe line and, in addition, to draw heavily on reserve storage in the Calaveras and peninsula

reservoirs and to pump a total of 2.88 billion gallons from the Pleasanton well fields. Withdrawals emptied Calaveras reservoir by December 14, 1948, and the peninsula reservoirs were reduced at that time to 19.61 billion gallons, an equivalent of 190 days' water supply. Subsequent runoff only partially replenished local storage and, as a consequence, it is probable that Calaveras reservoir will again be empty and that peninsula storage will be reduced to 18 billion gallons by Christmas 1949, which time will be about the normal start of run-off storage for the 1949-50 season.

Construction of a second section of the Sunset Supply Line, 3.6 miles in length, completed the pipe line between Baden and Sunset reservoir in April 1949. Water can now be delivered through this facility to Sunset reservoir by means of gravity flow from San Andres reservoir or from Crystal Springs reservoir by operating the pumps of Baden Station. Although the Sunset pipe line has an increased transmission capacity from the peninsula reservoirs to San Francisco amounting to about 10 million gallons per day, the present overall capacity into San Francisco is still only sufficient to comfortably meet peak days of consumption. Any extended interruption of service through one of the six transmission lines during peak consumption periods would seriously cripple San Francisco's water supply.

Water consumption for the entire system during the year ending June 30, 1949, averaged 103.2 million gallons daily, an increase of 2.2 million gallons daily over the preceding year. Of this total, 83.3 million gallons daily were used in San Francisco and the balance of 19.9 million gallons daily were used in suburban consumption. Based upon an estimated population of 814,500 for the City of San Francisco on January 1, 1949, the per capita consumption amounts to 102.27 gallons per day.

The peak 24 hour demand on the system, occurring on June 3, 1949, was 138.3 million gallons, which is equal to the previous all time peak 24 hour water use on June 22, 1948.

The low 24 hour demand on the system, occurring on February 13, 1949, was 73.3 million gallons.

The maximum month's demand in June, 1949, averaged 124.4 million gallons daily as compared to the previous all time high of 122.6 million gallons daily which occurred during July, 1947.

Net water sales for the year amounted to $10,932,354, an increase of $317,777 or 3 per cent over the preceding year. Accounts within the city limits increased by $125,546 making a total net sales within the City of $9,307,267 or 85.2 per cent of the department's total net sales. Suburban net sales increased $192,231, making a total suburban sales of $1,625,087 or 14.8 per cent of the department's total net sales.

The number of active consumer accounts increased from 141,143 on June 30, 1948, to 143,221 on June 30, 1949, a gain of 2,078.

Accounts determined to be uncollectible totaled $2,648, an increase of $987 over the preceding year.

On June 30, 1949, the total number of water meters in service was 146,819, an increase of 2,410 during the past year.

Personnel employments amounted to a total of 547 on June 30, 1949, including 58 temporary employments.

During the year 36.065 acres of land were sold and 115.918 acres were pur-

chased, making a net increase of 79.853 acres during the past year, and resulting in a total of 63,606.924 acres being held under the Department's jurisdiction, of which 35,450 acres are leased under 155 lease holdings.

Disinfection of all water supplies has been continuous and all consumers received water which was in full compliance with the bacteriological standard established by the United States Public Health Service for drinking water purity.

During the fiscal year, the Department prepared 34 contracts for construction work and for furnishing of equipment, totaling in amount to over $731,000.

Deletion from the budget for the second successive year of funds requested for continuation of the Sutro reservoir project, unless restored, will defer at least for another year the completion of this project which is vitally necessary to maintain adequate distribution reservoir capacity for domestic use and fire protection in the rapidly growing district west of Twin Peaks.

Plans and specifications progressed to 85 per cent of completion on June 30, 1949, for Bay Division Pipe Line No. 3. This pipe line will be aligned to follow a dry-land route around the south end of San Francisco Bay, from Irvington Portal to the easterly portal of Pulgas Tunnel, a distance of about 34 miles. The pipe line will be 78" in diameter for the 8.5 miles from Irvington Portal to Milpitas and 72" in diameter for its remaining length of 25.25 miles. Capacity of this pipe line will be about 76 million gallons daily. Plans and specifications are being prepared on an alternate basis of a steel or reinforced concrete pipe line.

A contract for extending the Crystal Springs Pumping Station is nearing completion which will add 4 pumps to boost water through the 60" Crystal Springs pipe line and will thereby preserve the pipe line capacity of 60 million gallons daily during periods of low storage in Crystal Springs reservoir.

Water withdrawals from the rehabilitated Pleasanton Wells supply system commenced in February 1948 and continued to April 30, 1949. During this period the total quantity of water pumped from this source amounted to 4.48 billion gallons.

A large amount of maintenance, deferred during the war for sundry reasons of material and labor shortages, must still be accomplished. Funds requested for cleaning and painting the Bay Crossing pipe lines and their steel supporting trestle at Dumbarton Straits were deleted from the budget for the ensuing year. Corrosion, progressing over extensive areas of these vital facilities and the errosive effects of electrolysis occurring to other parts of the Bay Division Pipe Lines, will make maintenance the more costly the longer corrective work is deferred.

A routine inspection of the waterworks system was conducted by engineers of the National Board of Fire Underwriters, and this report was filed with the proper authorities. The Department was given 184 deficiency points out of a possible 1700 points. Two large items, accounted for a large number of deficiency points, being 60 points for the four inch pipe in the system and 54 points for the spacing of the gate valves. These two items should be improved as rapidly as possible. The other items showing deficiency points ran from 3 to 25 points, some of which cannot be reduced due to natural conditions in the City. The other smaller items will be improved as it becomes possible.

On January 1, 1949, Mr. George W. Pracy was appointed General Manager and Chief Engineer of the San Francisco Water Department, succeeding Mr. Nelson A. Eckart. Retirement of Mr. Eckart culminated 36 years of City service.

His city engagements included: 1913-19, Assistant City Engineer in Charge of the Municipal Railway; 1920-30, Chief Assistant City Engineer in Charge of Utilities; 1930 to retirement, General Manager and Chief Engineer of the Water Department. Since retirement he has started a practice as Consulting Engineer. Recognition is herewith expressed to Mr. Eckart for his long and faithful service and for work superbly well done.

This foreword would not be complete without expressing a sincere appreciation to our personnel for their loyalty and cooperative efforts in maintaining and improving the efficiency of the Department.

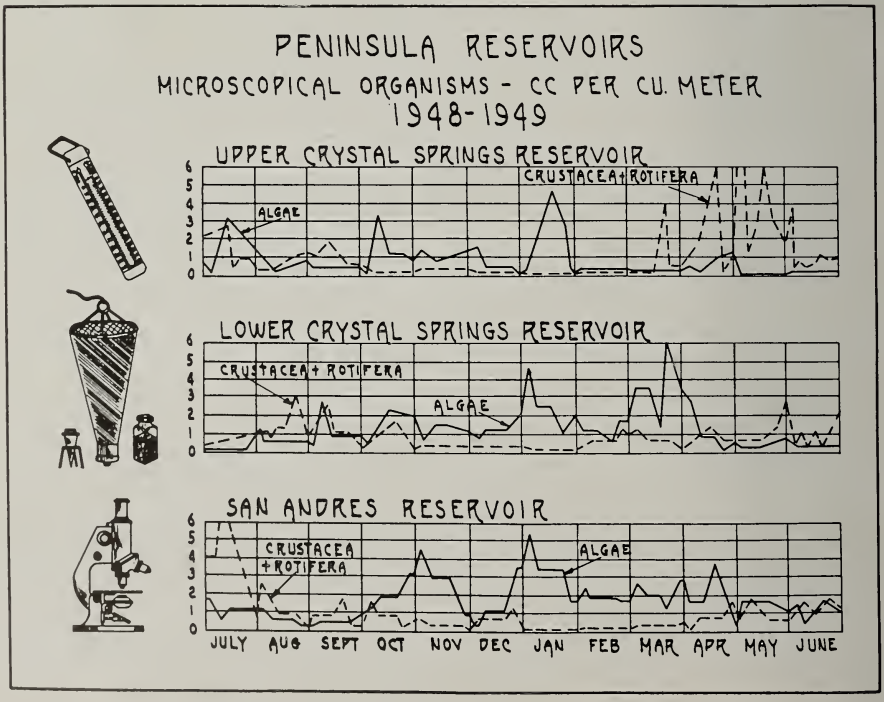
WATER PRODUCTION

General Operations:

The total amount of water used during the year, amounted to 37,676 million gallons. This water was supplied from the following sources:

Local Production	15,212 million gallons
Hetch Hetchy Sources	22,464 million gallons
Total	37,676 million gallons

Delivery from Hetch Hetchy sources averaged 61.5 million gallons daily and maximum possible delivery was continued throughout the year.



Approximately 98.7 per cent of the Hetch Hetchy water delivery was brought across the bay, the remainder being diverted into the Alameda System. The total delivery from Hetch Hetchy since cimpletion of the aqueduct on October 18, 1934, now amounts to 192,515 million gallons or an average of 35.9 million gallons daily.

The draft on water resources to meet consumption requirements for the year averaged 103.2 million gallons daily, an increase of 2.2 million gallons daily over the preceding year. Consumption in San Francisco increased 2.0 million gallons per day and suburban consumption increased 0.2 million gallons per day.

The 24 hours peak consumption for the entire system was 138.3 million gallons, occurring on June 3, 1949, and the maximum month's demand on the system occurring in June 1949, averaged 124.4 million gallons daily.

All water delivered to San Francisco was, as heretofore, supplied entirely from San Andres and Crystal Springs reservoirs in San Mateo County. These reservoirs were replenished from limited local run-off, by water drawn from Calaveras Reservoir in Alameda and Santa Clara counties and from underground sources in the Pleasanton and Sunol areas, as well as from the Hetch Hetchy system in the Sierra Nevada Mountains.

Water deliveries outside San Francisco are designated as suburban consumption. Practically all water deliveries outside the City of San Francisco are made to vendors who take large quantities at the department's transmission mains and distribute the water through their own distribution systems to individual consumers. The department's water is used by practically all cities and towns in San Mateo county and by the city of Palo Alto. The distribution systems in these communities are owned by individual cities, public utilities companies, water districts or private individuals. Relatively small deliveries are also made by the Department's transmission mains in the southerly area of Alameda county.

Rainfall, Catchment and Storage:

Rainfall in the Calaveras reservoir water shed area was 57 per cent of normal, or 84 per cent of the previous year's rainfall. On July 1, 1948, Calaveras reservoir was at gauge height 62′ 2″, and receded to a low of 3′ 11″ on December 11, 1948. The seasonal rains raised the reservoir water level to a gauge height of 83′ 1¾″ on May 18, 1949, the highest of the fiscal year. By July 1, 1949, the water level had lowered to 76′ 5½″.

Rainfall on the Peninsula water sheds was approximately 78 per cent of normal, but 7 per cent higher than the previous year. Crystal Springs Reservoir, on July 1, 1948, was at a gauge height of 106′ 2½″, dropping to 100′ 7″ on February 1, 1949. The highest gauge reading, 108′ 4″ occurred on April 4, 1949. On June 30, 1949, the water level was at gauge height 102′ ¾″. Seasonal rainfall in the San Andres reservoir water shed amounted to 26.43″, or 70 per cent of normal. In the Pilarcitos reservoir watershed, seasonal rainfall amounted to 35.33″, or 78 per cent of normal. The Pilarcitos watershed produced 940 million gallons during the past year.

The seasonal gain in storage, from a low of 22,370 million gallons on December 24, 1948, to a maximum of 34,452 million gallons on April 6, 1949, amounted to 12,082 million gallons. Surface storage in city, peninsula and Calaveras reservoirs on June 30, 1949, was 30,354 million gallons as compared to 29,706 million gallons at the end of the preceding year.

The water level in Pilot Well No. 103WX in the Pleasanton Water District

SUNSET SUPPLY LINE CROSSES LAKE MERCED

dropped 16 feet during the fiscal year. The present low ground water level in the Water District is the result of four conditions: first, the heavy pumping during war years by the Navy for Camp Shoemaker Naval activities; second, the continued pumping by Alameda County, who assumed operation of this Camp as the Navy withdrew; third, the light rainfall during this period which contributed only a slight replenishment of the underground water supply; fourth, the resumption of pumping from this area by the Water Department.

Transmission:

Water consumption within the city of San Francisco required delivery of a daily average of 83.3 million gallons into the city distribution system. Of this amount an average of 37.7 million gallons daily was delivered through the 60 inch and 44 inch Crystal Springs pipe lines; 29.7 million gallons daily was delivered through the San Andres 54 inch pipe known as San Andres pipe line No. 2; 5.7 million gallons daily through the College Hill pipe and 10.2 million gallons daily through the Baden-Merced Branch pipe line.

Suburban consumption, averaging 19.9 million gallons daily, was supplied directly from the several transmission and supply lines at various points in Alameda, Santa Clara and San Mateo counties.

An average of 37.5 million gallons daily was pumped from Crystal Springs reservoir into the San Andres reservoir through the Crystal Springs aqueduct

and an average of 8.2 million gallons daily was pumped by Alemany pumps into the higher levels of San Francisco.

The two bay crossing pipe lines carried an average of 90.5 million gallons daily across San Francisco Bay. Of this amount, an average of 10.7 million gallons daily was used by consumers served from these two lines and the balance was delivered into Crystal Springs reservoir. Of this total amount, Hetch Hetchy supplied 61.5 million gallons daily and the Alameda sources 29.0 million gallons daily.

Reservoirs:

On July 1, 1948, the storage in Calaveras reservoir was 4,562 million gallons or 14 per cent of its capacity. This storage dropped to 42 million gallons on December 11, 1948, the lowest storage since 1931, and then rose to a high of 8,843 million gallons on May 18, 1949. At the end of the fiscal year the storage was 7,296 million gallons, or 2,734 million gallons more than at the beginning of the fiscal year.

The period of low water provided an excellent opportunity to rebuild and install a new screen at Calaveras reservoir Outlet No. 2 which work was completed in December. There are now screens on all four Calaveras outlets except the bottom one.

Storage in Crystal Springs reservoir dropped gradually from 15,770 million gallons on July 1, 1948, to 13,752 million gallons on February 1, 1949. The water stored increased to 16,588 million gallons the first part of April, 1949, and then dropped to 14,263 million gallons on June 30, 1949, or 63 per cent of the reservoir capacity.

San Andres reservoir storage was held between 4,992 million gallons, on December 7, 1948, and 5,905 million gallons on April 6 and 7, 1949, during the year. This storage amounts to 81 per cent and 95 per cent respectively of the reservoir's capacity. This high level was maintained by operating Alemany pumps and pumping from Crystal Springs reservoir throughout the year.

On July 1, 1948, the storage in Pilarcitos reservoir was 684 million gallons. The minimum storage, occurring on December 13, 1948, was 517 million gallons. The maximum storage was 806 million gallons and was reached on March 21, 1949. Storage at the end of the fiscal year was 645 million gallons or 63 per cent of the reservoir's capacity.

During the year Pilarcitos reservoir supplied 978 million gallons to San Andres reservoir.

Pump Operations:

A total of 2,877 million gallons was pumped from the Pleasanton fields in the first ten months of the fiscal year from wells along lines F, G, M and O. Of this amount of water 2,847 million gallons was delivered through the Sunol aqueduct to the Irvington pumping station and there boosted into the Hetch Hetchy pipe lines, the remaining 30 million gallons was delivered to local consumers.

The Irvington pumping station, put into operation in February 1948, pumped into the Hetch Hetchy pipelines a total of 4,426 million gallons of water supplied from Pleasanton Well fields and Sunol filter galleries. An air chamber for surge repression was installed on the 44 inch pipe line at this station during the year. The Irvington station was operated throughout the year.

SUPPLY LINE
Sixty-inch Sunset Supply Line, Colma to Baden

STEEL SWAB
Cleaning tool used in pipeline rehabilitation.

For the past eleven years, the Pulgas pumping station has not been operated. The pumps, motors and their appurtenances have been removed and installed in the Irvington and Crystal Springs pumping stations.

The Crystal Springs-San Andres as well as the Alemany pumps, were operated throughout the year to maintain the high water level in San Andres reservoir. There were 13,702 million gallons pumped from Crystal Springs to San Andres reservoir during the year, a daily average of 37.5 million gallons. During this year two pumps were operated for twelve months and the third pump for eight months.

Due to possibilities of low reservoir storage resulting from small rainfall, enlargements were made to the Crystal Springs Pumping Station in order to provide facilities for maintaining maximum capacity delivery through the Crystal Springs aqueduct to San Andres reservoir and also maximum capacity delivery through the 60" Crystal Springs pipe line to University Mound reservoir during periods of low storage in Crystal Springs reservoir. This work included the installation of a larger motor for one pump, the purchasing of larger impellers for two pumps and the installation of two new pumping units, each consisting of one 500 H.P. motor driving two pumps.

The Alemany pumping station within the City was operated during the entire year for one shift a day. A total of 2,995 million gallons was pumped from the

University Mound system into the College Hill and Sunset systems, which are normally supplied from San Andres reservoir.

Pipe Lines:

All water brought through the various transmission lines was treated with chlorine.

The Sunol pipe line, from the Alameda Creek siphon to the town of Sunol, delivered a total of 275.4 million gallons of water during the year. Of this total 250.1 million gallons were used for irrigation and the balance of 25.3 million gallons were used for the Sunol domestic supply.

During the entire fiscal year, the Niles-Irvington pipe line was used to carry waters developed at Pleasanton Well fields and Sunol filter galleries to the Irvington pumping station, from where the water was boosted into the Hetch Hetchy lines. A total of 4,426 million gallons was pumped into the Hetch Hetchy lines from the Niles-Irvington pipe lines.

On the west side of the bay the section of the Alameda transmission line, between Burlingame and San Carlos, continued to deliver Crystal Springs water to local consumers. Ten leaks developed in this line during the first six months of this fiscal year. Two sections of this pipe line amounting to 15,672 feet were lined with concrete mortar during the last half of the year. A twenty inch valve, opposite Valley View Street in the City of Belmont and two additional eight inch services, one to San Mateo and the other to Belmont were installed. Blow-off valves along El Camino Real were repaired. Part of the old Ravenswood gate house was dismantled.

During the fiscal year the two Bay Division pipe lines carried a total of 33,025 million gallons across the bay, of which 29,124 million gallons were delivered through the Pulgas Water Temple to Crystal Springs reservoir.

The Palo Alto pipe line delivered a total of 2,203 million gallons to various consumers along the line south of Redwood City, an average of 6.04 million gallons daily. The maximum weeks' demand on this line averaged 9.06 million gallons daily as compared to 8.73 million gallons daily for the maximum week's demand for the preceding year.

Both of the Crystal Springs pipe lines were in service throughout the year. The 44-inch line carried an average of 14.0 million gallons per day and the 60-inch line carried an average of 33.7 million gallons per day, from the reservoir outlets at the dam. Of this total of 47.7 million gallons daily 29.5 million gallons daily was delivered to and used in the University Mound distribution system; 8.2 million gallons per day was delivered to University Mound reservoir, from where it was pumped through the Cross-Town pipe line to higher level distribution systems in San Francisco; 1.5 million gallons per day was diverted from the 60 inch Crystal Springs pipe into the Baden-Merced branch pipe line, through which it was delivered to Merced Manor reservoir and the balance of 8.5 million gallons daily was delivered to the distribution systems of the several Peninsula communities, as far south as San Carlos.

The College Hill distribution district consumption averaged 7.6 million gallons per day. Of this amount, 5.7 million gallons daily was delivered through the 30 inch College Hill pipe line and the balance 1.9 million gallons per day, came from Alemany pumps via the Cross-Town pipe line. The 5.7 million gallons

daily College Hill pipe line supply came from the San Andres reservoir via the 44 inch San Andres pipe line.

The Baden-Merced branch pipe line carried a total average of 10.2 million gallons per day, 8.7 million gallons per day of which was supplied from San Andres reservoir via the 44 inch San Andres pipe line and the balance of 1.5 million gallons per day was supplied from the 60 inch Crystal Springs pipe line. The San Andres water was delivered during the period from July 15, 1948, to May 10, 1949, and the Crystal Springs water for the balance of the year.

The 54 inch San Andres pipe line carried a total of 10,833 million gallons of water, or an average of 29.7 million gallons per day, from San Andres reservoir to Sunset and the other high San Francisco pressure districts during the year.

In this fiscal year there were only two significant leaks on the College Hill pipe line.

During the year the sections of the 60 inch Sunset Supply line across an arm of Lake Merced and from Baden to Colma were completed. This work completes the pipe line from Baden to Sunset reservoir within the City. Crystal Springs water can now be pumped and San Andres water can now flow by gravity to the Sunset reservoir through this line.

Aqueducts:

For the first ten months of the fiscal year, the Sunol aqueduct carried water from the Pleasanton Wells and throughout the entire year from the Sunol filter galleries to Niles reservoir, from where the waters were carried through the Niles-Irvington pipe line to Irvington pumping station. The water was then pumped into the Bay Division pipe lines for delivery to consumers on the west side of San Francisco Bay.

The Crystal Springs aqueduct was in operation throughout the year, carrying a total of 13,702 million gallons of water to San Andres reservoir from Crystal Springs reservoir.

The Pilarcitos aqueduct to San Andres reservoir was in service during the entire fiscal year and carried an average of 2.7 million gallons daily to San Andres reservoir. The aqueduct has a capacity of 40 million gallons per day.

Alameda, General:

Air valves on Hetch Hetchy pipelines No. 1 and No. 2 were cleaned and painted.

Calaveras reservoir was given three copper sulphate treatments for algae control.

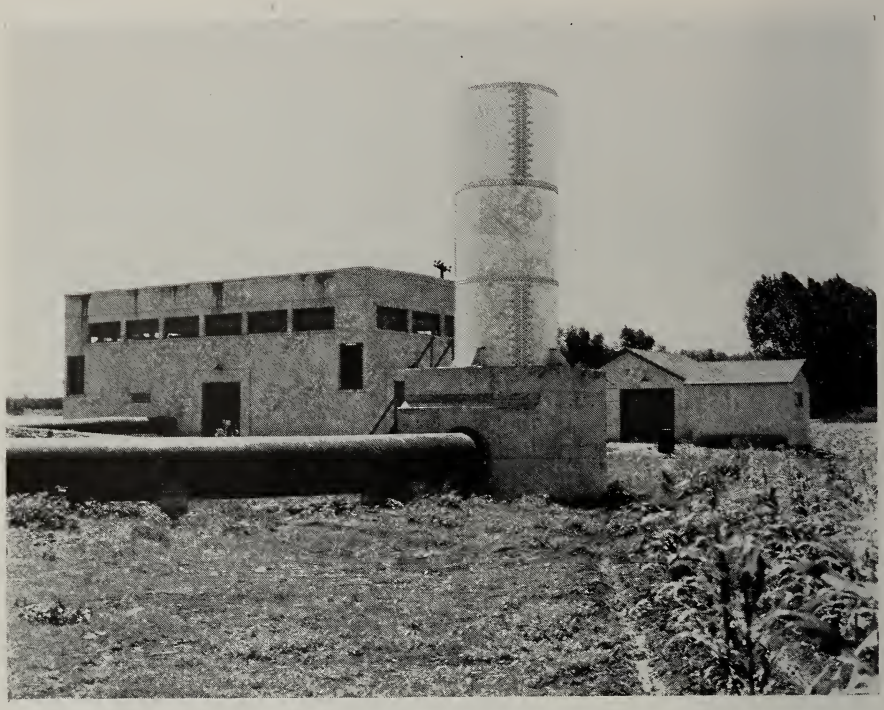
Roads were graded and gravel road surfaces repaired.

A new screen was installed on No. 2 outlet at Calaveras reservoir. Screens on Outlets No. 3 and No. 4 were cleaned and painted.

The Alameda Division Dam was sluiced during the very short flood period.

Equipment for a water level transmission system, between Niles reservoir and Irvington pumping station was installed.

A large number of new bents were installed to replace old decayed timber bents, under the Niles-Irvington and Hetch Hetchy pipe lines.



PUMPING STATION
Irvington pumping station, with new surge tank in foreground.

Several leaks on Hetch Hetchy pipe line No. 1, due to electrolytic action, were repaired.

The Coast Range tunnel of the Hetch Hetchy aqueduct, between the Alameda siphon and Irvington Portal, was inspected and found in good condition.

Stream gauge recordings on Mocho, Del Vale, Costa, Laguna and Alameda creeks were continued as in past years.

The Upper Alameda Creek diversion tunnel was inspected and found in good condition.

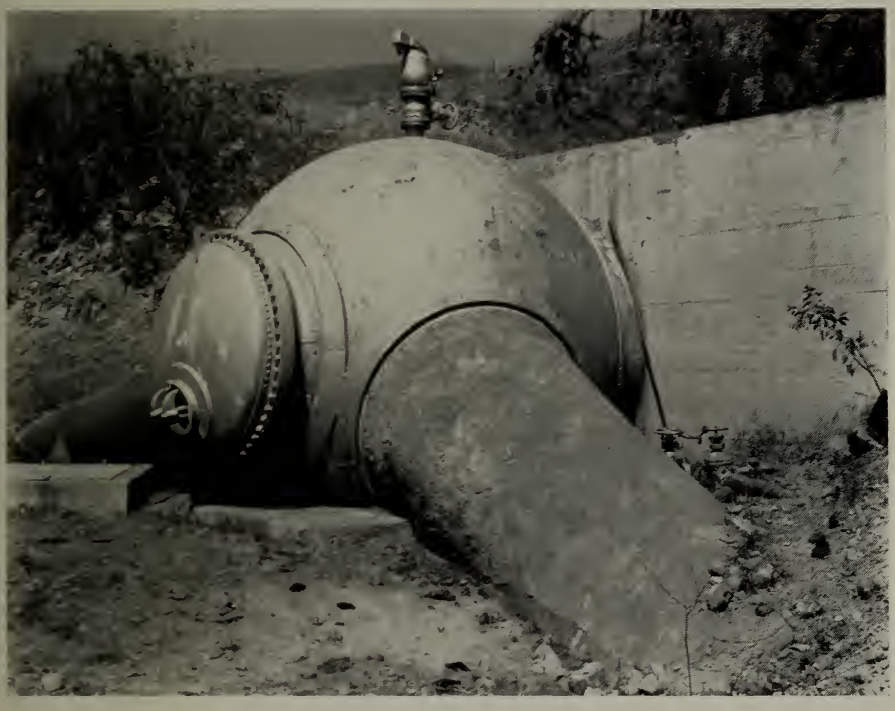
Pumping from the wells in Pleasanton Valley was continued to May 1, 1949.

Irvington pumping station operated the full year.

Fire guarding, fence repairing, brush cutting and general maintenance were carried on throughout the year.

Peninsula, General:

The Baden pumping station did not operate during the year. Motors were turned over by hand and electric heater strips were placed in coils to maintain motors free of moisture. Grounds around the station were maintained.



CONNECTION
Where new bay pipeline will connect with system.

Booster equipment in the Crystal Springs pumping station was tested. Repairs and replacements were made to meet anticipated demands upon the station.

The pumps, motors and electric equipment of old Pulgas pumping station have, during recent years, been transferred to the Irvington and Crystal Springs pumping stations and the building is now used to house the line valve in the 60 inch Bay Division pipe line.

Crystal Springs, San Andres and Pilarcitos reservoir waters required no unusual treatment during the year. One copper sulphate treatment for algae control was given to San Andres reservoir and the upper lake of Crystal Springs reservoir. Two treatments were given to Pilarcitos reservoir.

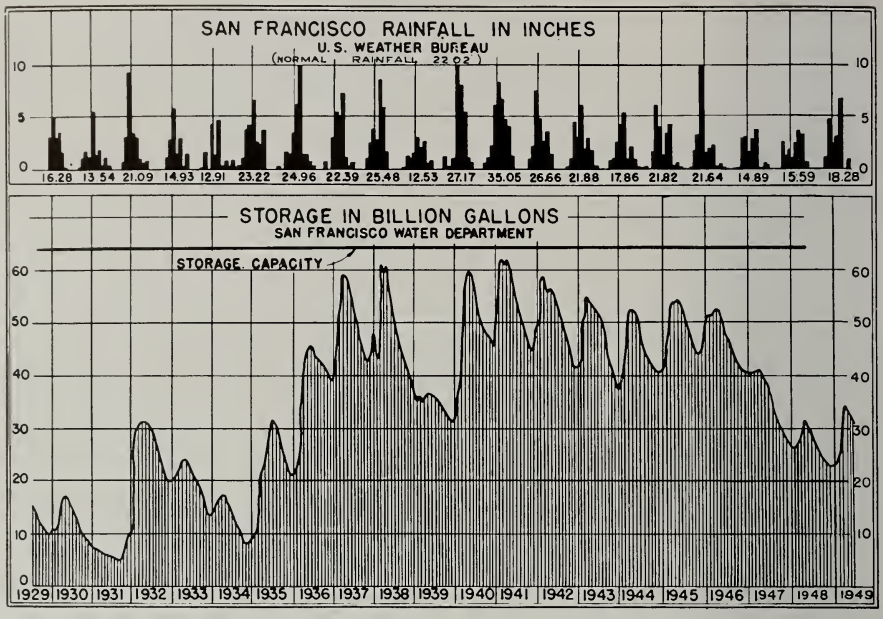
A trail was graded between No. 2 and No. 3 Outlets of San Andres Reservoir.

Pilarcitos Creek between Pilarcitos and Stone dams was cleared of debris.

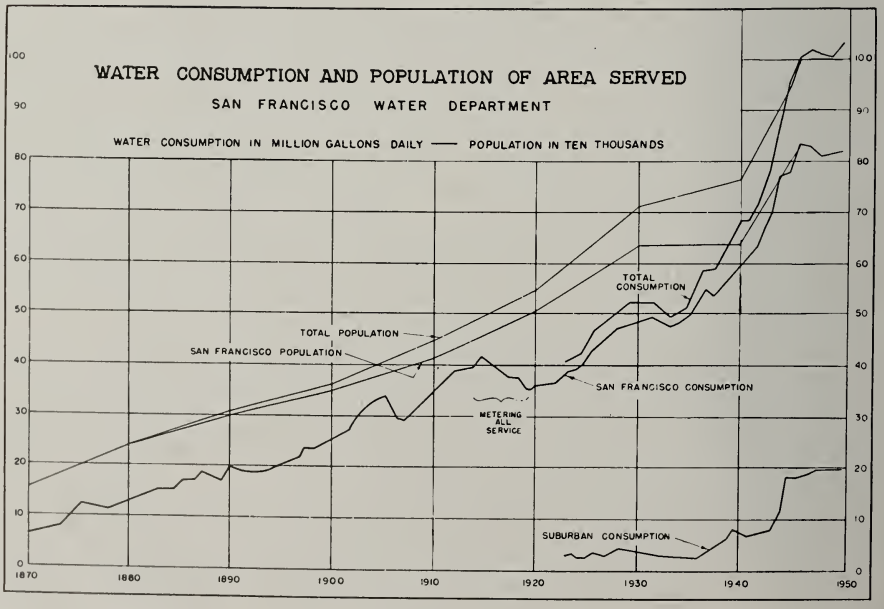
Leaks caused by electrolytic action were repaired on Crystal Springs and Bay Division 60 inch transmission lines. Leaking expansion joints in the 76 inch Bay Division pipe line were repacked.

Considerable work was performed in maintaining an open road between Pilarcitos and Stone Dams.

Rip-rap protection below the spill of the side flume to Pilarcitos reservoir was repaired to protect the gauge board.


SAN FRANCISCO RAINFALL IN INCHES
U.S. WEATHER BUREAU
(NORMAL RAINFALL 23.02)
16.28 13.54 21.09 14.93 12.91 23.22 24.96 22.39 25.48 12.53 27.17 35.05 26.66 21.88 17.86 21.82 21.64 14.89 15.59 18.28
STORAGE IN BILLION GALLONS
SAN FRANCISCO WATER DEPARTMENT
STORAGE CAPACITY
1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949

A-1086


WATER CONSUMPTION AND POPULATION OF AREA SERVED
SAN FRANCISCO WATER DEPARTMENT
WATER CONSUMPTION IN MILLION GALLONS DAILY — POPULATION IN TEN THOUSANDS
TOTAL CONSUMPTION
TOTAL POPULATION
SAN FRANCISCO POPULATION
SAN FRANCISCO CONSUMPTION
METERING ALL SERVICE
SUBURBAN CONSUMPTION
1870 1880 1890 1900 1910 1920 1930 1940 1950

Alameda County Water District:

During the year, a total of 73,730,000 gallons of water was released to the Alameda County Water District for replenishment to the underground gravel of the Niles Cone area. Under the terms of the 1920 award, 761,190,000 gallons were due the district during the year. There thus resulted, under the terms of the 1936 agreement, a decrease of 687,460,000 gallons in our "advance release" to the district. The total of computed "advance release" to June 30, 1949, amounts to 22,693,163,000 gallons.

Pleasanton Township County Water District:

The Sheriff of Alameda County continued to use the U. S. Navy's Camp Shoemaker as a jail farm during the fiscal year. Water supplied to this institution, as well as to the former Naval housing project, Komandorski Village, was taken from the Navy's 100-acre and 4.105 acre tracts within the Pleasanton Water District. Except for artesian flow above ground surfaces, between 1940 and 1944, no water was taken from the Water Department's Pleasanton wells for export subsequent to 1939 until February, 1948. Since this latter date and April 30, 1949, the Department took an average of 9.9 million gallons per day for export to San Francisco. On April 30, 1949, San Francisco discontinued exporting Pleasanton Well water.

Withdrawals for the above enumerated purposes together with those for domestic and irrigation use within the District gradually lowered the water table over a period of years throughout the entire Water District. Pilot Well No. 103W in the easterly end of the District, was 65 feet below ground surface on February 1, 1948; 76 feet on June 30, 1948; 103 feet on November 3, 1948; 72 feet on April 6, 1949; 76 feet on April 30, 1949; and 90 feet on June 30, 1949. The water table in Well F-28, near the center of the Department's well field in the west end of the District, was 29 feet below ground surface on February 1, 1948; 63 feet on June 30, 1948; 92 feet on November 3, 1948; 109 feet on April 6, 1949; 114 feet on April 30, 1949; and 113 feet on June 30, 1949.

Due to the low water table elevation the obligation of the Water Department to furnish water to the Town of Pleasanton and to pay electric charges for pumping community and land owners' wells continued throughout the year. The town of Pleasanton continued, throughout the year, to obtain all its water supply from Water Department wells, located at Black Avenue and Santa Rita Road. The town paid all resulting electric power bills and such payments were later reimbursed by the Water Department. Throughout the year, the Department also reimbursed the District for electric power charges for pumping "community wells" and paid power bills rendered to land owners, except as otherwise provided in the "Pleasanton Township County Water District Agreement."

Although runoff into the Department's local storage reservoirs, during the 1948-49 season, was well below normal it still was of sufficient quantity to allow discontinuance of pumping from the Pleasanton Wells, by May 1949. Discontinuance of pumping served to retard recession of the water table, to defer, and it is hoped to eliminate the necessity of possible excessive expenditures in providing water supplied to land owners in conformity with the "Pleasanton Water District Agreement." Due to the lowered water table, expenditures were also necessarily made for rebuilding and powering pumps in two wells supplying the

town of Pleasanton and for augmenting the supply to the District's community wells system by diverting water, from the town's water system into the District's community water system.

Suburban Meters:

There were 17 new services installed during the year for suburban consumers. The total number of suburban meters at the close of the year was 1,040 of which 1,011 serviced 724 active consumers; an increase of 4 active consumers for the year.

Gross suburban water sales for the past year amounted to $1,625,693, an increase of 13.4 per cent over the preceding year.

CITY DISTRIBUTION DIVISION

Water Consumption:

The average daily consumption for the City and County was 83,297,819 gallons, an increase of 1,995,537 gallons or 2.5 per cent over the previous year. The residential districts all showed an increase in consumption, while the industrial and semi-commercial districts showed a decrease. Forest Hill increased 5.7 per cent; Stanford Heights 5.1 per cent; Merced Manor 11.5 per cent; and Sunset 7.4 per cent; while University Mound decreased 0.3 per cent, and College Hill 8.7 per cent.

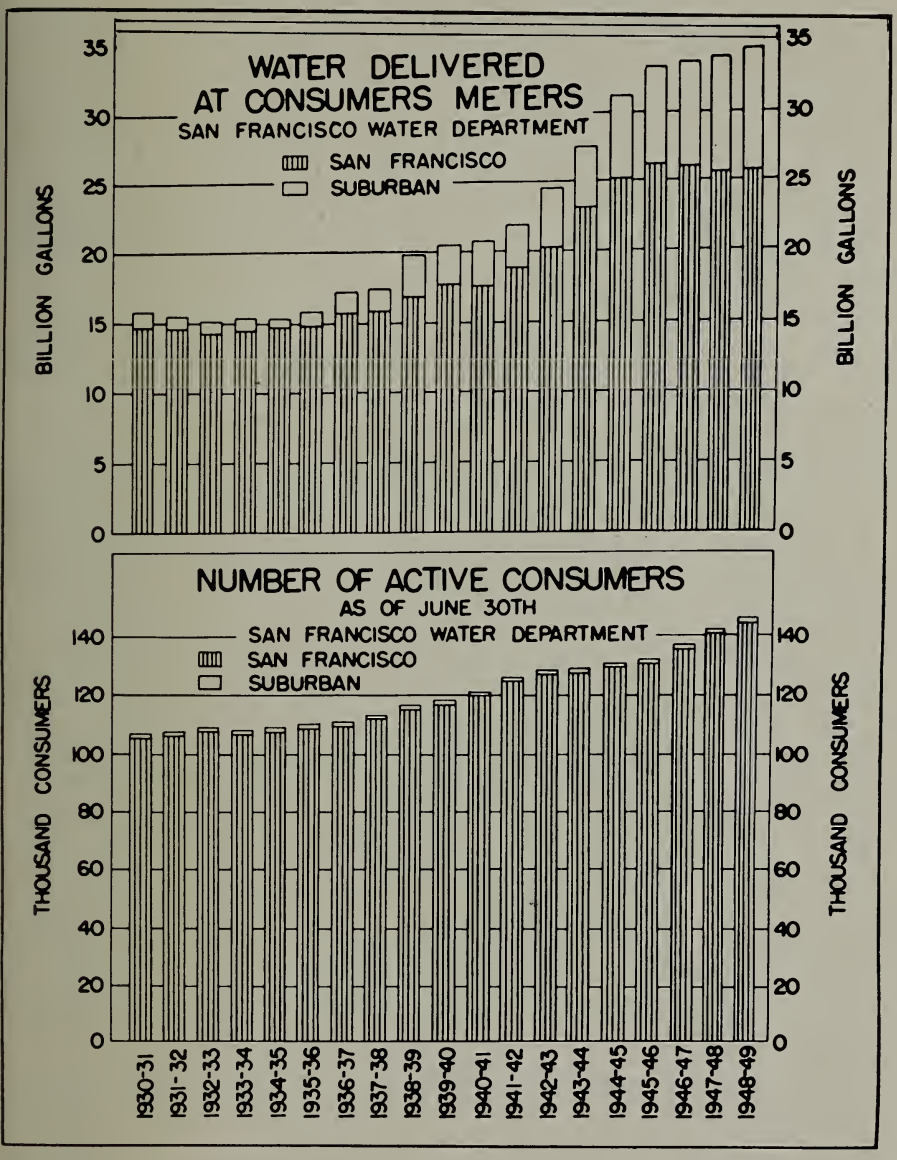
The maximum daily consumption for the entire city during the year occurred on June 3, 1949, and amounted to 106,240,000 gallons, while the day of minimum consumption occurred on July 4, 1948, and amounted to 60,746,000 gallons.

Operating Conditions:

An increase in consumption in the residential area continued to tax the capacity of many feeder mains, and as a result many complaints were received of "poor pressure" as well as "no water." These conditions became acute in some instances during the warm weather periods.

The Wilde Avenue District, which is a portion of the Sunset District, has inadequate water service. In order to keep this district supplied with water, it became necessary after June 4, 1949, to augment the supply by using a portable gasoline engine driven centrifugal pump having a capacity of 500 gallons per minute and taking suction from an air valve on the 60-inch Crystal Springs transmission main. An average pumping time of 8 hours is required once a week to meet the water demand in the District. The deficiency in the Wilde Ave. District can be overcome by constructing a new feeder main into this area, which is now being planned by the Department.

The Stanford Heights District is also in a critical condition. During the warm spell of June 4th, Stanford Heights Reservoir water level dropped from approximately 18 feet to below 8 feet on the gauge board. Central Pumps supply this reservoir and district and were operated at their maximum capacity of 13.5 million gallons daily, beginning June 3rd through June 6th. At this latter date the water level on the reservoir gauge board returned to about 18 feet, the overflow being at 20 feet. In addition to Central Pumps, the Francisco Pump was operating during this time, supplying about 1000 gallons per minute to the Stanford Heights District.


WATER DELIVERED
AT CONSUMERS METERS
SAN FRANCISCO WATER DEPARTMENT
SAN FRANCISCO
SUBURBAN
BILLION GALLONS
0
5
10
15
20
25
30
35
NUMBER OF ACTIVE CONSUMERS
AS OF JUNE 30TH
SAN FRANCISCO WATER DEPARTMENT
SAN FRANCISCO
SUBURBAN
THOUSAND CONSUMERS
0
20
40
60
80
100
120
140
1930-31
1931-32
1932-33
1933-34
1934-35
1935-36
1936-37
1937-38
1938-39
1939-40
1940-41
1941-42
1942-43
1943-44
1944-45
1945-46
1946-47
1947-48
1948-49

The daily consumption on June 4th for the Stanford Heights District was 14.9 million gallons daily, the maximum rate of demand being at least 50 per cent greater than the daily consumption. Under these conditions the feeder mains proved inadequate, resulting in poor pressure conditions in the district. The solution to this situation is the immediate completion of the Sutro Reservoir, together with the installation of the required feeder mains.

It should again be stressed, that while the other distribution districts showed no ill effects from the warm spell of June 4th, they are however approaching the critical stage. A hot spell of several days' duration will create a serious situation throughout the entire City. Only by the laying of additional feeder mains throughout the various districts can this situation be avoided.

Serious consideration should be immediately given toward financing the required additions and betterments in the City Distribution System; it now being a "race against time" to adequately fulfill the requirements for the system.

Transmission Mains:

The original 44-inch Crystal Springs transmission main, as well as the 30-inch College Hill transmission main, are in very poor condition, the carrying capacity of each being reduced about one half of their original capacities. In order to restore these mains to their original full carrying capacities they should be either reconditioned to the fullest practicable extent, or they should be replaced with new mains.

City Reservoirs:

All the reservoirs are in good condition. No further work was done on the Sutro Reservoir. It still remains a hole in the ground, being graded but unserviceable until provided with a concrete lining, cover and connecting pipelines. This project should be completed as soon as possible.

Lake Merced:

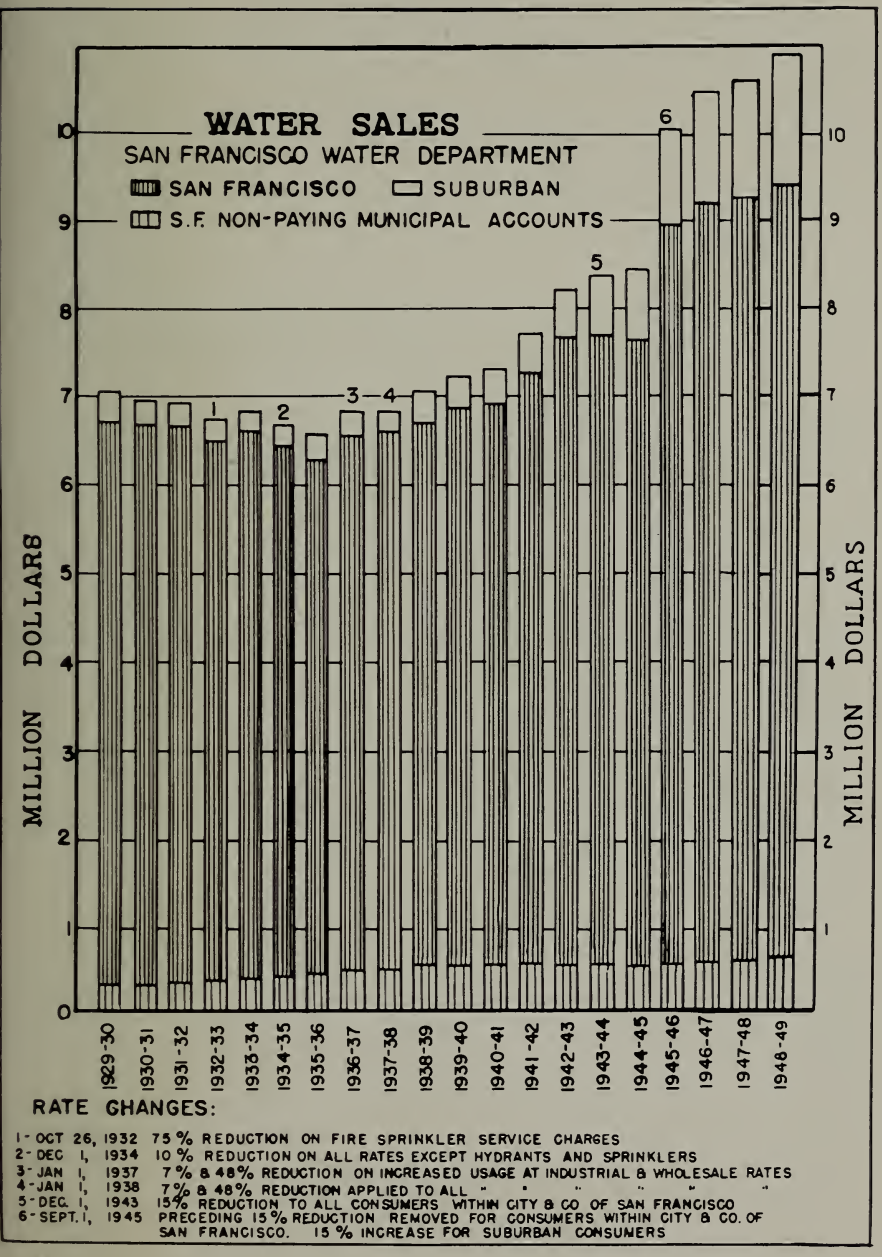
No water was drawn from Lake Merced during the year. The boating concession is still being operated by C. M. Kay. Several regattas were held on the Lake, in which local oarsmen took part.

Pumping Stations:

Central Pumps operated throughout the year at an average rate of 10.6 million gallons daily. As previously stated, this station operated at its maximum capacity of 13.6 million gallons daily for four consecutive days.

Francisco Pump was put into service on May 6th and has been in operation continuously since that time. This pump is on an automatic control and goes into service as required. Its normal period of operation is from about 7:15 A.M. to about 11:30 A.M. of each day. During warm weather its period of operation is longer, depending upon consumption demands.

Lane Street Pump is operating at its maximum capacity and will soon require additional pumping capacity.



RATE CHANGES:

1 - OCT 26, 1932 75 % REDUCTION ON FIRE SPRINKLER SERVICE CHARGES
2 - DEC 1, 1934 10 % REDUCTION ON ALL RATES EXCEPT HYDRANTS AND SPRINKLERS
3 - JAN 1, 1937 7 % & 48% REDUCTION ON INCREASED USAGE AT INDUSTRIAL & WHOLESALE RATES
4 - JAN 1, 1938 7% & 48% REDUCTION APPLIED TO ALL " " " " " "
5 - DEC. 1, 1943 15% REDUCTION TO ALL CONSUMERS WITHIN CITY & CO OF SAN FRANCISCO
6 - SEPT. 1, 1945 PRECEDING 15 % REDUCTION REMOVED FOR CONSUMERS WITHIN CITY & CO. OF SAN FRANCISCO. 15 % INCREASE FOR SUBURBAN CONSUMERS

Olmstead Pump requirements have passed its maximum capacity, additional temporary pumping being required. This condition will be overcome by the laying of a new feeder main into the district, the plans and specifications for which are now being prepared.

Twin Peaks Pump is also required to serve at its maximum capacity and additional pumps will soon be required.

The balance of the pumping plants are operating normally without any unusual difficulty.

City Pipe System:

Several extremely urgent secondary feeder mains, 12-inch and 16-inch in diameter, were laid during the year, together with the normal routine extensions of 4-inch, 6-inch and 8-inch mains, the data being given in Table No. 6.

Services and Meters:

There were 2,279 domestic and 44 fire services installed during the year. A total of 3,098 new meters were installed, 3,786 meters changed and 666 returned to the shop.

WATER PURIFICATION DIVISION

Adequate precautions for safeguarding the San Francisco water supply and normal water treatment practices were in force throughout the year. Disinfection of all supplies was continuous and all water supplied to consumers complied with the bacteriological standards set up by the U. S. Public Health Service for drinking water purity. No cases of illness can be attributed to the water supply.

Although our source supplies vary from a very soft mountain supply to a relatively hard ground water, the mixture supplied to consumers continues to be moderately soft and of relatively low mineral content. In general the water is free of tastes and odors and its clarity is good when considering that it is primarily a surface supply not undergoing filtration.

Laboratory:

All bacteriological and chemical analyses and biological examinations are performed in our laboratory located at Millbrae, a central point for sanitary control and water treatment operations. It is reasonably well equipped and receives annually from the State Department of Public Health a renewal "Certificate of Approval" for laboratory service in the examination of water for conformity with Public Health requirements.

Following is a tabulation which summarizes the field and laboratory tests made in connection with water treatment, sanitary control and special investigations:

Bacteriological Examinations	6,555
Routine Microscopical Examinations of Algae	411
Other Microscopical Examinations	392
Electrical Conductivity Measurements	3,784
Complete Mineral Analyses	25
Partial Chemical Analyses	501
Dissolved Oxygen Tests	586

Analyses to Determine Origin of Leaks	217
Complaint Investigations	91
Turbidity Measurements	3,131
Soil Tests—Corfield Nipple and Can	184
Miscellaneous Laboratory Tests Not Otherwise Included	1,055
Chlorine Residual Tests	4,776
Miscellaneous Field Tests	1,927

New equipment and furniture purchased included an automatic pipette for dispensing media, wardrobe cabinet, small parts cabinet and a book case.

Chlorination:

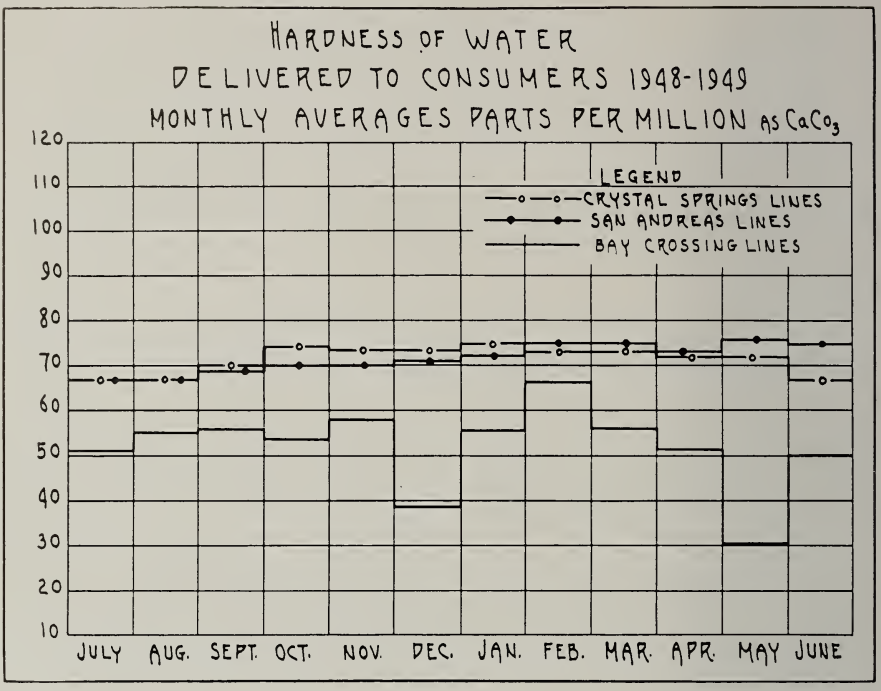
Chlorination of all supplies was adequate and continuous with no water being exposed to contamination between the time of last chlorination and the consumer's tap. Eight of our chlorination stations operated continuously throughout the year with Calaveras, Irvington, San Andres No. 3 and Sunset operating 6.4 months, none, 11.4 months and 4.9 months respectively. The portable chlorination unit was used a number of times for sterilization of new and reconditioned pipe lines. Equipment was inspected regularly, overhauled or repaired when advisable and maintained in first class working condition at all times.

A total of 877,171 lbs. of chlorine was used during the year, the majority being used for maintaining chlorine residuals in our Coast Range Tunnels and Bay Crossing lines for control of organisms entering with tunnel infiltration water. Dosages at our Peninsula Division stations ranged from four to six pounds per million gallons with a somewhat lower rate being used at our City Distribution Division stations and considerably higher rates at our stations in the Alameda Division and Tesla.

New equipment purchased during the year included two chlorinators, one of which was installed in the Alameda Division and the other in the Peninsula Division. The expansion of Crystal Springs pumping station required remodeling of the chlorine station, permitting chlorine cylinders to be placed in a room separate from the chlorination equipment. Specifications were prepared for the new equipment purchased for the Tesla station located in the Coast Range Division of the Hetch Hetchy Department which is necessary for adequate treatment of the increased flows available with the additional San Joaquin Valley pipe line.

Algae Control:

Reduced algal activity in the Peninsula reservoirs coupled with low reservoir levels in Calaveras resulted in the lowest use of copper sulphate for algae control that we have experienced in years. Treatments were based on the result of the microscopical examination of weekly or semi-weekly net catches collected from our local storage and impounding reservoirs and the total copper sulphate required was 44,000 lbs. Calaveras reservoir was treated during the months of July, October and May for the control of anabaena and aphanizomenon, ceratium and dinobryon, and volvax and ceratium, requiring 23,800 pounds of copper sulphate. Upper Crystal Springs was treated in early August for the control of ceratium, requiring 10,000 pounds of copper sulphate. San Andres was treated in November for control of anabaena and synedra, requiring 7,600 pounds of copper sulphate. Pilarcitos was treated in December for aphanizomenon and in April for asterionella and mallomonas, requiring 2,600 pounds of copper sulphate. No treatments for algae control were required in our city distribution reservoirs.

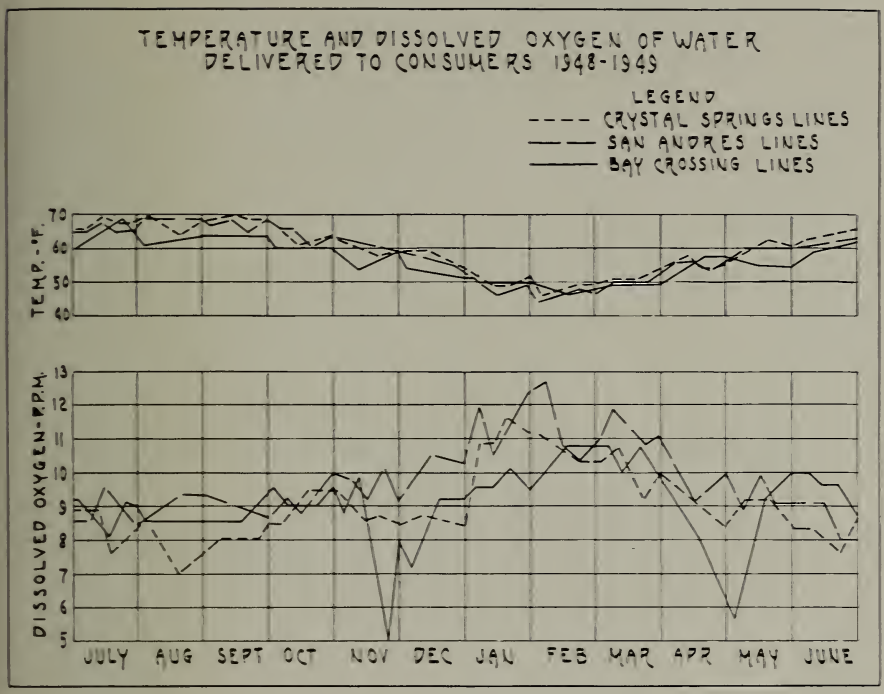


Cross Connections:

Practically all of the 170 double check valve assemblies for back-flow prevention, on service lines to premises having a secondary water supply, were inspected once during the year. In addition there are 377 of these double check valve assemblies installed on the service lines to fire or water service hydrants on the water front to protect our system against possible salt water contamination. Two hundred and nine of the installations were installed and are maintained by the Water Department. Spot checks throughout the year indicated these assemblies to be operating efficiently. State and Federal Health authorities require the installation and regular inspection of these back flow protection assemblies in order that our supply be approved for certification.

Inspections:

Inspections were made of the Bay Crossing Lines, Irvington Tunnel and Calaveras Line, during the year to determine slime organism activity. This is the third consecutive year during which no inspection was made of the Coast Range Tunnel as this would have required a shut down of Hetch Hetchy water for two weeks or more which would be most inadvisable during this continued period of sub-normal run-off. The problem of controlling the organisms entering with the tunnel infiltration water continues to be somewhat difficult inasmuch as water from Hetch Hetchy, Calaveras, Pleasanton Wells and the Sunol Filter Galleries is all mixed together in the Bay Division Aqueduct. However, chlorine dosages



were continued at a high level in order to maintain residuals throughout the aqueduct and organism control was fairly satisfactory. Additional laboratory work should be done in the study of these organisms as soon as the personnel are available.

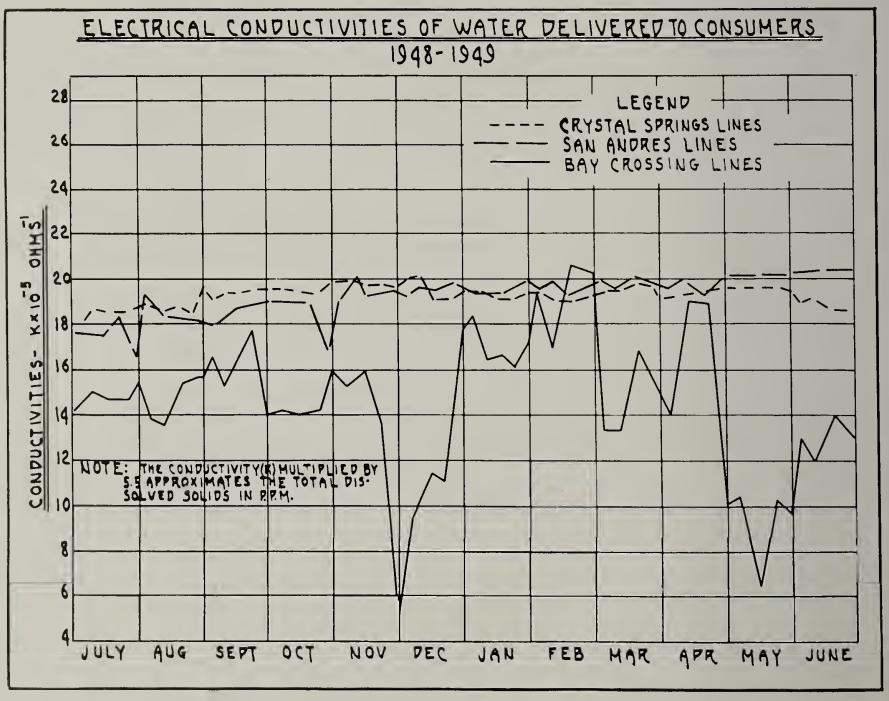
The annual joint sanitary survey was again made of the sewage disposal facilities at Tuolumne Meadows and O'Shaughnessy Dam with representatives of the U. S. Public Health Service and the Yosemite National Park. There was no indication of any sewage pollution of the headwaters of the Tuolumne River from these facilities. Periodic inspections were also made of our local watersheds for protective purposes. The State Department of Public Health recommended favorable certification of our supply to the U. S. Public Health Service after inspection of our laboratory facilities and water treatment and analytical records without requiring a complete field survey of facilities.

Corrosion Control:

Our moderately soft water, like most such untreated waters, continues to be slightly corrosive, resulting in a few complaints from this cause during the year. However, our extremely soft Hetch Hetchy water is more aggressive, resulting in attack of our transmission lines where protective coating is absent and in more complaints from aqueduct consumers when not mixed with local supplies. This condition is to be remedied by lime treatment from a plant to be located at Rock River Shaft. Bids have been let for equipment and plans and specifications are under way with plant construction to be completed during the coming year.

Water Quality and Complaints:

The use of water from Pleasanton Wells and Sunol filter galleries during the year, which is mixed with other source supplies before serving to consumers, resulted in a slight increase in the chemical content as compared to last year. However, the chemical quality as well as the bacteriological quality continues to be excellent and the concentrations of dissolved salts are well under the recommended limits established by the U. S. Public Health Service in their 1946 Drinking Water Standards. Harmful elements such as lead, arsenic and hexavalent chromium were absent and elements such as copper, iron, zinc, magnesium and sulfates and chlorides were well under accepted limits. Iodine is very low but not entirely absent; boron is present in concentrations sufficient to prevent boron deficiency in plants but not present in concentrations high enough to harm the most sensitive plants or trees; fluoride is present but the concentrations are too low to be of any benefit in the reduction of dental caries.



REPORT OF LABORATORY EXAMINATIONS
Week Ending June 25, 1949

SAN FRANCISCO WATER DEPARTMENT

Source and Reservoirs	Max. Agar Count 37° C	Coliform Group 10cc Por. No. Ex'd	10cc Por. No. Pos.	10cc Por. % Pos. Mo.	Chemicals p.p.m. Alk.	Cl.	Hard	pH	Turbidity	Date Sample Pos.
Moccasin Reservoir	270	5	2	16.0	8	1	12	6.9	1.5	6/21/49
Calaveras Reservoir	5	5	0	20.0	80	8	92	7.5	4.5	Cal. Line
Sunol Filters	1	5	0	0	234	24	242	7.7	0.5	
Pleasanton Wells	59	5	0	8.0	220	29	236	8.1	1.0	
Crystal Springs Reservoir	4	5	0	0	62	13	68	7.9	1.5	
San Andres Reservoir	2	5	0	12.0	67	16	74	7.9	2.0	
Pilarcitos Line	1	5	0	0	58	22	62	7.9	4.0	
College Hill Reservoir	3	10	7	60.0	..	..	..	..	1.5	(4)6/20/49 (3)6/23/49
Lombard Reservoir	17	10	5	53.4	..	..	..	..	1.5	(4)6/20/49 (1)6/23/49
Univ. Mound Reservoir No. 1	4	10	5	40.1	..	..	..	..	0.5	(1)6/20/49 (4)6/23/49
Univ. Mound Reservoir No. 2	1	10	0	4.4	..	..	..	..	0.5	
Sunset Reservoir	1	10	0	0	..	..	..	..	1.5	
Treated Waters—										
Niles Aqueduct	1	5	0	0	230	32	246	7.9	0.5	
Irvington Pump Station	1	5	0	0	230	32	246	7.9	0.5	
Sunol Town Supply	2	5	0	0	40	5	52	7.3	3.0	
Hetch Hetchy Aq. Bay X	2	30	0	0	40	5	52	7.3	3.0	
Palo Alto Pipe Line	1	15	0	0	40	5	52	7.3	1.5	
Crystal Springs Line No. 1	6	30	0	0	60	13	68	7.7	1.5	
Alameda Line, Belmont	6	10	0	0	60	13	68	7.7	1.5	
San Francisco Airport	1	10	0	0	60	13	68	7.7	0.5	
Crystal Springs Line No. 2	2	30	0	0	62	12	68	7.9	1.0	
San Andres Line No. 1	3	30	0	0	67	16	74	7.9	1.5	
San Andres Line No. 2	2	30	0	0	67	15	74	7.7	2.5	
San Andres Line No. 3	1	10	0	0	..	..	..	..	2.0	
Univ. Mound Inlet No. 1	1	10	0	0	..	..	..	..	0.5	
Univ. Mound Inlet No. 2	1	10	0	0	..	..	..	..	0.5	
Univ. Mound Outlet No. 1	1	10	0	0	..	..	..	..	0.5	
Univ. Mound Outlet No. 2	1	10	0	2.2	..	..	..	..	0.5	
Univ. Mound System No. 1	2	10	0	4.4	..	..	..	..	0.5	
Univ. Mound System No. 2	1	10	0	0	..	..	..	..	0.5	
Univ. Mound System No. 3	1	10	0	0	..	..	..	..	2.0	
Univ. Mound System No. 4	1	10	2	4.4	..	..	..	..	1.5	(1)6/20/49 (1)6/23/49
Univ. Mound System No. 5	1	10	0	0	..	..	..	..	1.5	
Univ. Mound System No. 6	3	10	0	0	..	..	..	..	3.5	
College Hill Inlet	1	10	0	0	..	..	..	..	1.5	
College Hill Outlet	1	10	0	0	..	..	..	..	2.0	
College Hill System No. 1	1	10	0	0	..	..	..	..	2.0	
College Hill System No. 2	1	10	0	0	..	..	..	..	1.5	
Sunset Trans. System	2	10	0	0	..	..	..	..	2.0	
Sunset Inlet	3	10	0	0	..	..	..	..	1.5	
Sunset Outlet	1	10	0	0	..	..	..	..	1.5	
Sunset System No. 1	1	10	0	0	..	..	..	..	1.5	
Sunset System No. 2	1	10	0	0	..	..	..	..	4.5	
Merced Manor Reservoir	1	10	0	0	..	..	..	..	2.5	
Merced Manor System	8	10	0	0	..	..	..	..	4.0	
Stanford Heights Reservoir	1	10	0	0	..	..	..	..	1.5	
Stanford Heights System No. 1	1	10	0	0	..	..	..	..	2.0	
Stanford Heights System No. 2	1	10	0	0	..	..	..	..	1.5	
Lombard System	1	10	0	6.7	..	..	..	..	1.5	
Forest Hill Pump Suction	1	10	0	0	..	..	..	..	2.5	

Tubes positive for all transmission lines and San Francisco samples for month 0.45%.
All water served to consumers complies with the United States Public Health Service Standards for drinking and culinary water supplied to common carriers in interstate traffic.

The average monthly hardness of water served from our peninsula reservoirs ranged from 67 ppm. to 77 ppm. with an overall weighted average of about 72 ppm., which is equal to 4.22 grains per gallon. The average monthly hardness of water served to consumers from our Bay Crossing lines ranged from 35 ppm. to 61 ppm. with a weighted average of about 53 ppm. However, daily fluctuation will exceed these limits due to variations in pumping rates at Irvington pump station which are necessary for efficient operation.

The pH of the water withdrawn from the peninsula reservoirs ranged from 7.5 to 7.9 with an average of 7.7; the alkalinity varied from 64 ppm. to 70 ppm. with an average of 68 ppm.; and the chlorides varied from 10 ppm. to 15 ppm. with an average of 12 ppm. The water served from the Bay Crossing lines had a pH ranging from 7.2 to 7.6 with an average of 7.4; an alkalinity content, in general, ranging from 26 ppm. to 56 ppm. with a weighted average of 46 ppm.; and a chloride content ranging from 7 ppm. to 11 ppm. with an average of 8 ppm. Short time fluctuations, however, exceeded these limits.

Temperatures of water served from the peninsula reservoirs ranged from a minimum in winter of 45° F. to a maximum in summer of 70° F., with a weighted average of about 59.5° F. Dissolved oxygen content ranged from 7.0 ppm. to 12.6 ppm. with an average of about 9.3 ppm. The oxygen content averaged about 93 per cent of saturation. The temperatures of water served from our Bay Crossing lines ranged from a winter minimum of 47° F. to a summer maximum of 69° F. with a weighted average of 58.9° F. The dissolved oxygen content ranged from a minimum of 5.0 ppm. to a maximum of 10.8 ppm. with an average of 9.1 ppm. The oxygen content averaged about 90 per cent of saturation.

Although another year of subnormal local runoff aided in maintaining fairly clear water in the peninsula reservoirs throughout the winter months, the major cause of water quality complaints continues to be dirty water. Only a thorough flushing of all distribution system mains and artificial treatment will guarantee crystal clear water to consumers at all times.

SAN FRANCISCO WATER DEPARTMENT

MINERAL ANALYSES—WATER SERVED TO CONSUMERS

(Results expressed in parts per million, except pH and conductivity)

SOURCE	1 Crystal Springs Lines	2 San Andres Lines	3 Bay Crossing Lines
Conductivity (K x 10^{-5} ohm^{-1})	18.7	19.8	11.5
pH	7.9	7.9	7.3
Total Solids (Calculated)	106.0	112.0	67.2
Silica (SiO_2)	4.5	6.5	6.2
Sodium (Na)	11.7	12.3	7.2
Calcium (Ca)	16.4	16.1	11.3
Magnesium (Mg)	7.6	7.9	3.7
Iron, Dissolved (Fe)	0.02	0.02	0.03
Aluminum (Al)	0.02	0.02	0.06
Manganese (Mn)	0	0	0
Boron	0.14	0.11	0.16
Fluoride (F)	0.05	0.05	0.09
Carbonate (CO_3)	0	0	0
Bicarbonate (HCO_3)	81.0	81.0	48.2
Sulphate (SO_4)	15.8	18.6	8.15
Chloride (Cl)	11.0	11.0	6.0
Nitrate (NO_3)	0.05	0.05	0.1
Hardness, Calculated ($CaCO_3$)	72.0	73.0	43.0
Alkalinity ($CaCO_3$)	66.0	66.0	40.0

Column 1 supplies downtown, commercial, waterfront areas of the City, and peninsula communities as far south as San Carlos.
Column 2 supplies residential areas of the city.
Column 3 supplies peninsula communities only (south of San Carlos).

MONTHLY SUMMARIES OF BACTERIOLOGICAL ANALYSES SAMPLES COLLECTED FROM THE SAN FRANCISCO DISTRIBUTION SYSTEM IN ACCORDANCE WITH CERTIFICATION REQUIREMENTS

Month	Number of Samples	10 Millimeter Portions Number of Tubes	Tubes Positive	Per Cent Positive	Samples Positive (3 or More Tubes) Number Positive	Per Cent Positive
1948						
July	341	1705	5	0.293	0	0
August	333	1665	4	0.240	0	0
September	331	1655	3	0.182	0	0
October	320	1600	4	0.250	0	0
November	339	1695	28	1.65	3	0.885
December	347	1735	3	0.173	0	0
1949						
January	338	1690	5	0.295	1	0.295
February	309	1545	9	0.582	0	0
March	343	1715	8	0.467	1	0.292
April	320	1600	0	0	0	0
May	339	1695	5	0.294	0	0
June	347	1735	8	0.461	0	0

WATER SALES DIVISION

Gross water sales amounted to $10,953,008. San Francisco gross sales were $9,327,315 of which $601,463 were to other municipal departments in lieu of taxes. Suburban gross sales were $1,625,693. Deduction of allowances and refunds amounting to $20,654 resulted in net sales of $10,932,354, an increase of $317,777 or 2.99 per cent over the previous fiscal year. San Francisco net sales were up $125,546, principally in residential accounts, to $9,307,267. Suburban net sales were up $192,231 to $1,625,087.

It is interesting to note that water deliveries to suburban accounts were some 26 per cent of total metered sales and that revenue produced from these accounts was some 15 per cent of net sales. The variance in percentages comes about principally because of the large deliveries, at the cheaper steps, for resale to suburban communities. Sales to suburban, municipally operated, enterprises, who are taking water for resale, amounted to $560,826, an increase of $72,076. Palo Alto pipe line deliveries totaled 295,379,300 cubic feet for which we received $366,802 in revenue, up $68,745 from the previous fiscal year.

Closing bills were issued on 18,725 accounts during the year. Accounts determined to be uncollectible totaled $2,648, an increase of $987. The suspense balance, being accounts closed out and awaiting collection or write off, decreased by $715 to $3,106 at June 30, 1949.

Requests for water supply requiring the installation of new services or distributors totaled 2,370. The bulk of these orders, 1,240 were in the South of Market-Twin Peaks area which includes the outer Mission. The Sunset-Parkside area accounted for 666 new installation orders. Automatic sprinkler service installations spurted from 27 in 1947-48 to 47 in 1948-49. Inspections of new work handled by our builders and contractors section totaled 2,956.

Consumers' accounts receivable at June 30 amounted to $816,177, an increase of $91,700 over the previous June 30. However, the percentage of receivables at

June 30, 1949, to sales for the month of June was only 78.5 per cent, indicating a close follow-up by the collection division. Collections for the year were $10,240,-927. A decrease of 277 man days service by the regular collectors resulted in a slight decrease in the number and amount of the bills collected by them. In spite of this, however, the average number of bills collected per man day increased from 62 to 64.2 and the ratio of bills collected to bills taken out increased from 28.5 per cent to 29.6 per cent. The decrease in the number of bills handled by collectors, together with the increase in the number of bills issued, resulted in an increase of bills mailed to 793,079 or approximately 47.5 per cent of the bills issued. Of the total number of bills collected, branch banks accounted for 41 per cent, mail 36 per cent, and collectors 17 per cent, with the remainder coming in at the office or through American Express agencies.

The investigation of claims for damage caused by activities of the Department, including water damage from broken pipes of the Department, has long been a function of the Water Sales Division. Total claims filed against the Department during the fiscal year, not including investigations where no claims were filed, was 106 in the total sum of $11,877. Of these, 14 claims in the sum of $19,375 were denied. Settlements were made of 52 claims, two of which had been filed in 1947-48. The 50 claims, in the 1948-49 fiscal year were originally filed for $4,980 and settled for $3,141, a further saving of $1,749. The two claims from the 1947-48 fiscal year were originally filed for $55,567. One of these settlements was by Court action wherein judgment was rendered in favor of the Department. There were 48 claims pending at June 30, 1949, in the total sum of $108,309. Six of these claims, for $20,698, were filed in 1947-48.

ENGINEERING DIVISION

The work of the Engineering Division, during the past year, was primarily concerned with the preparation of plans, specifications, engineering studies, reports, estimates of cost, inspection of construction and in some cases the supervision of maintenance work. Various other services of a continuing nature were performed during the year including the preparation of property descriptions, revocable permits and the stating of conditions for land transactions; the maintenance of maps and records and the furnishing of photostatic and photographic service to all city owned utilities.

Plans and specifications were prepared for thirty formal and four informal Water Department contracts which were awarded for a total estimated amount of $734,700. Engineering supervision and inspection services were provided for $1,108,793.14 worth of contract work actually completed during the year. Of the thirty formal contracts awarded during the fiscal year 1948-49, twenty-two were for water main extensions. Seven of these extensions were awarded to the Water Department in an amount totaling $151,796.10; and were completed during the year at a cost of $145,739.41 or $6,056.69 less than the bid price.

A survey of proposed capital improvements to the water system was made, in connection with budgetary and city planning purposes, for the period beginning July 1, 1949, and ending June 30, 1955. Water Department requirements for this period were estimated at some $20,942,000 worth of improvements having varying degrees of urgency. A number of the more essential extensions, programmed to start next year and for which funds have not been appropriated in whole or part, include the following projects:

Project	Estimated Cost
Forest Hill Pumps and Piping	$80,000
Sutro Reservoir Lining and Roof	1,120,000
Sutro Reservoir Pipeline	800,000
Balboa Reservoir—North Basin	1,800,000
Corporation Yard	200,000
Sunset Supply Line—Baden to San Bruno	500,000
Sunset Supply Line—San Bruno to Millbrae	420,000
Sunset Supply Line—Millbrae to Burlingame	900,000
Replacement of Crystal Springs 44" Pipe Line (Burlingame to San Bruno)	1,400,000

A contract for extending the Crystal Springs pumping station, at a bid price of $81,174.55, was the largest single contract awarded during the year. The work included the extension of the pump station building; the extension of the Chlorination building and facilities and the installation of two complete pumping units, each consisting of a 500 horsepower induction motor and two centrifugal pumps hooked up in tandem. The additional pumping units will serve to boost water through the 60" Crystal Springs pipe line, thereby maintaining the pipe line capacity of 50 million gallons per day during periods of low storage in Crystal Springs reservoir. The contract for this work was 97 per cent complete on June 30, 1949.

Installation of a surge tank at Irvington Pump Station was completed under contract, on December 10, 1948, at a cost of $16,079.44. The work involved the conversion of a filter tank, removed from the City Pump Station, into a surge tank; the installation of an air compressor and its appurtenances; and the raising, widening and resurfacing of a portion of the existing pump station roadway.

Construction of a second section of the 60 inch Sunset Supply line, 3.6 miles in length, completed the pipe line between Baden and Sunset Reservoir. Part of this section, crossing Lake Merced, was completed on October 8, 1948, at a cost of $62,202.60 and the remaining part was completed April 30, 1949, at a cost of $282,640.66. Water can now be delivered through this pipe line to Sunset reservoir by means of gravity flow from San Andres reservoir or from Crystal Springs reservoir by operation of the pumps at Baden Station.

A contract for cleaning and placing mortar lining in 15,672 feet of the 36-inch riveted wrought iron Alameda pipe line near Belmont, originally constructed in 1887, was completed March 15, 1949, at a cost of $68,589.39.

Plans and specifications are nearing completion for the construction of Bay Division pipe line No. 3. This pipe line will connect to the Coast Range tunnel at Irvington portal, thence extend southerly 8.5 miles with 78 inch pipe to the vicinity of Milpitas from whence a 72 inch diameter pipe line will run westerly 25.25 miles and connect with the east portal of the Pulgas tunnel. The overall length of the pipe line will be 33.75 miles and will be designed for a maximum pressure head of 400 feet in the valley section and a capacity of 76 million gallons a day. Plans and specifications are being prepared on an alternate basis of a steel or a reinforced concrete pipe line.

Preliminary engineering plans for a concrete lining and roof for the Sutro reservoir were completed during the year. Funds for the construction of this important project were deleted from the budget for the second consecutive year.

Engineering studies were conducted during the year toward deriving means of rectifying leakage conditions through the west abutment of Calaveras Dam as evidenced in the weepholes of the 8 foot outlet tunnel. Remedial work should

be accomplished with the water level above elevation 720, a condition which probably will not occur for two years.

During the year preliminary engineering studies were made for constructing a new pumping station on the southeasterly shore of Lake Merced. These studies contemplate electric motor-driven pumping units for normal operation with diesel-electric generators for furnishing power during periods of emergency. The plan is for a station which can either take water from Lake Merced or from Crystal Springs reservoir, via the Sunset pipe line, and pump it into Sunset and Sutro reservoirs.

A brief description of work performed under contract during the fiscal year follows:

Formal Contract:

1. Additions to City Pipe System:

In all contracts involving the laying of cast iron or transite pipe or the installation of services, the contractor is required to obtain the pipe and fittings from the Water Department. The cost of this material, of connections made by the department's forces, and of engineering and inspection are included in the following stated contract costs. In cases where the Water Department acts as the contractor the cost given is the actual cost of the completed work.

Extensions and replacements to the Department's distribution grid system are made under contract, the Department furnishing all necessary pipe, fittings and service material. The value of these items, and the engineering and inspection costs are set up in the contract bid sheets in a manner so that the "bid total" includes the cost of furnished items, engineering and inspection, and the summation represents the total cost to the Department for the facility. On most of this class of work the Water Department submits a bid and does the work if its bid is the lowest of those received.

Contract No. 477—For installation of 5 services, one 8-inch fire sprinkler service and the laying of 1470 feet of 8-inch cast iron mains in Alemany Boulevard and Custer Street. The contract was awarded to E. J. Treacy on March 29, 1948, and was completed on July 16, 1948, at a cost of $7,080.16.

Contract No. 479—For laying of 487 feet of 6-inch and 598 feet of 8-inch cast iron mains in Army Street from Shotwell Street to South Van Ness Avenue in connection with the widening of Army Street. The contract was awarded to Fred T. Fairey on May 17, 1948, and was completed on November 18, 1948, at a cost of $4,948.41.

Contract No. 480—For laying of 1,004 feet of 12-inch and 5,844 feet of 16-inch cast iron mains in Green, Steiner and Franklin Streets in order to strengthen the water supply to the Lombard Street District. The contract was awarded to the Water Department on July 12, 1948, on a low bid of $86,721.50 and was completed on May 31, 1949, at a cost of $88,428.52.

Contract No. 482—For installation of 124 services and the laying of 2204 feet of 6-inch, 7,594 feet of 8-inch, 1,450 feet of 12-inch and 1,409 feet of 16-inch cast iron mains in Lakeshore Park Subdivision No. 3 and in Sloat Blvd. The contract was awarded to E. J. Tobin on June 7, 1948, and was completed on October 18, 1948, at a cost of $56,372.19.

Contract No. 483—For installation of 113 services and the laying of 1390 feet of 6-inch and 1650 feet of 8-inch cast iron mains in Amherst, Princeton, University, Bacon and Wayland Streets. The contract was awarded to E. J. Treacy on May 10, 1948, and completed on August 27, 1948, at a cost of $11,805.25.

Contract No. 484—For laying of 3,833 feet of 12-inch cast iron mains in Ocean, Phelan, and Flood Avenues and in Ridgewood Street from Harold Street to Joost Street. The contract was awarded to E. J. Treacy on August 23, 1948, and completed on December 23, 1948, at a cost of $30,752.74.

Contract No. 487—For laying of 2,996 feet of 4-inch cast iron mains in Clara and Shipley Streets between 4th and 6th Streets and in Clementina Street between 5th and 6th Streets and 252 feet of 8-inch main in Arkansas Street between 22nd and 23rd Streets. The contract was awarded to the Water Department on August 4, 1948 on a low bid of $16,008.00 and completed on November 11, 1948 at a cost of $9,729.27.

Contract No. 489—For laying of 85 feet of 6-inch and 3,958 feet of 8-inch cast iron mains in Fillmore Street between Bush and Hayes Streets, performed in connection with the reconstruction of Fillmore Street. The contract was awarded to the Water Department on August 4, 1948 on a low bid of $27,029.00 and was completed on September 15, 1948 at a cost of $30,164.71.

Contract No. 490—For installation of 13 services and the laying of 1,346 feet of 8-inch cast iron mains in Sloat Boulevard between 39th and 43rd Avenues. The contract was awarded to Fred T. Fairey on August 9, 1948, and was completed on October 27, 1948, at a cost of $5,643.17.

Contract No. 491—For installation of 3,380 feet of 16-inch cast iron mains in Newcomb Street between Third and Quint Street, in Quint Street between Oakdale and Newcomb Streets and in Oakdale Street between Selby and Quint Streets. The contract was awarded to E. J. Tobin on February 7, 1949, and was completed on April 19, 1949, at a total of $39,556.82.

Contract No. 492—For installation of 2 services and the laying of 903 feet of 8-inch cast iron main in Illinois Street between 23rd and 25th Streets. The contract was awarded to F. T. Fairey on August 16, 1948, and was completed on October 22, 1948, at a total cost of $4,167.27.

Contract No. 494—For the installation of 46 services and the laying of 615 feet of 6-inch and 531 feet of 8-inch cast iron mains in Pacheco and Montana Streets. The contract was awarded to F. T. Fairey on September 20, 1948, and was completed on November 24, 1948, at a total cost of $5,946.70.

Contract No. 495—For the laying of 2,559 feet of 16-inch cast iron main in Third Street between Thornton and Jamestown Avenues. The contract was awarded to E. J. Tobin on October 4, 1948, and work was completed on March 1, 1949, at a cost of $50,203.32.

Contract No. 497—For laying of 5,751 feet of 16-inch cast iron mains in 28th and 45th Avenues. The contract was awarded to F. T. Fairey on October 25, 1948, and work was completed on February 23, 1949, at a cost of $68,149.80.

Contract No. 498R—For installation of 57 services and the laying of 736 feet of 6-inch and 1094 feet of 8-inch cast iron mains in Apparel Heights. The contract was awarded to E. J. Treacy on December 20, 1948, and work was completed on May 6, 1949, at a cost of $8,589.75.

Contract No. 499—For laying of 1,996 feet of 4-inch cast iron mains in Columbia Square, Erie and Trainor Streets. The contract was awarded to E. J. Treacy on November 15, 1948, and was completed on May 10, 1949, at a cost of $8,150.57.

Contract No. 501—For installation of 28 services and the laying of 604 feet of 6-inch and 423 feet of 8-inch cast iron mains in Duncan and Phelps Streets. The contract was awarded to the Water Department on December 20, 1948, on a low bid of $5,863.20 and was completed on April 27, 1949, at a cost of $5,288.74.

Contract No. 502—For laying of 64 feet of 4-inch and 573 feet of 8-inch cast iron mains in Gough Street Extension, between Market and Otis Streets. The contract was awarded to the Water Department on January 3, 1949, on a low bid of $4,342.50 and was completed on April 12, 1949, at a cost of $2,679.47.

Contract No. 503—For laying of 1,823 feet of 12-inch cast iron mains in Mason, Washington and Stockton Streets. The contract was awarded to Martin Murphy on December 20, 1948, and was completed on April 6, 1949, at a cost of $24,603.91.

Contract No. 505—For installation of 33 services and the laying of 201 feet of 4-inch and 615 feet of 6-inch cast iron mains in Kronquist Court and 27th Street. The contract was awarded to the Water Department on January 24, 1949, on a low bid of $4,168.60 and was completed on April 11, 1949, at a cost of $3,861.07.

Contract No. 506—For installation of 60 services and the laying of 558 feet of 6-inch and 646 feet of 8-inch cast iron mains in Moscow Street and 12th Avenue. The contract was awarded to the Water Department on February 16, 1949, on a low bid of $7,663.30 and was completed on June 27, 1949, at a cost of $5,587.63.

Contract No. 507—For installation of 23 services and the laying of 594 feet of 6-inch cast iron mains in 34th Avenue and Quintara Street. The contract was awarded to E. J. Tobin on March 21, 1949, and was completed on May 12, 1949, at a cost of $2,044.71.

Contract No. 508—For installation of 54 services and the laying of 70 feet of 6-inch and 800 feet of 8-inch cast iron mains in Athens Street from Madison to Peru Street. The contract was awarded to E. J. Treacy on May 9, 1949, at an estimated bid price of $4,683.55, on June 30, 1949, work had not been started on this contract.

Contract No. 509—For installation of 7 services and the laying of 945 feet of 8-inch fire sprinkler service in Quintara and Jones Streets. The contract was awarded to F. T. Fairey on May 23, 1949, at an estimated bid price of $5,841.30. The contract was 43 per cent completed on June 30, 1949.

Contract No. 510—For installation of 119 services and the laying of 1900 feet of 6-inch and 1650 feet of 8-inch cast iron mains in South Hill Blvd., Rolph Street and Chicago Way. The contract was awarded to F. T. Fairey on May 23, 1949, at an estimated bid price of $16,800.75. The contract was 6.8 per cent completed on June 30, 1949.

Contract No. 512—For laying of 504 feet of 8-inch and 167 feet of 12-inch cast iron mains in 19th Avenue and Winston Drive. The contract was awarded to F. T. Fairey on May 23, 1949, and was completed on June 24, 1949, at a cost of $4,370.05.

2. *Additions to Supply and Transmission Facilities:*

Contract No. 478—For construction of 18,644 feet of 60-inch Sunset Supply line from Baden to Colma. The contract was awarded to McGuire and Hester on April 12, 1948, and was completed on April 30, 1949, at a cost of $282,640.66,

exclusive of expense claimed by Contractor for being delayed in obtaining right of way.

Contract No. 485—For construction of an earth fill across an arm of Lake Merced and the installation of 409 feet of 60-inch welded steel pipe line. The contract was awarded to the M & K Corporation on June 21, 1948, and was completed on October 8, 1948, at a cost of $62,202.60.

Contract No. 467R—For reconstruction of the intake screen at Adit No. 1 at Calaveras Dam. The contract was awarded to Minton and Kuban on October 4, 1948, and was completed on December 7, 1948, at a cost of $11,618.29.

3. Miscellaneous Contracts:

Contract No. 469R—For remodeling of the Millbrae pump station. The contract was awarded to N. O. Wiseth on January 12, 1948, and completed on July 14, 1948, at a cost of $24,332.00.

Contract No. 473A-R—Provides for the erection of a 100,000 gallon elevated tank in the Potrero Heights District. The contract was awarded to Chicago Bridge and Iron Company on December 27, 1948, at an estimated bid price of $30,477.35. On June 30, 1949, field work had not been started on this contract.

Contract No. 488—For the repavement of streets and sidewalk openings made by the Department for installation or repair work during the fiscal year 1948-49. The contract was awarded to the Pacific Pavements Company Ltd. on June 21, 1948, and terminated June 30, 1949, at a cost of $68,685.12. Repavement over trenches opened by other contractors, performing work for the Department is not included under this annual paving contract, as each contractor is required to provide his own paving.

Contract No. 493—For gathering and delivering of Walnut Crop from the orchard at Sunol. The contract was awarded to J. Hezler on August 23, 1948, and was completed on November 11, 1948, at a cost of $11,081.91.

Contract No. 496—For installation of a surge tank at Irvington Pump Station. The contract was awarded to C. Norman Petersen on October 4, 1948, and was completed on December 10, 1948, at a cost of $16,079.44.

Contract No. 500—For southern extension of Crystal Springs Pumping Station. The contract was awarded to C. Norman Petersen on November 22, 1948, at an estimated bid price of $81,174.55. On June 30, 1949, the contract was 97 per cent completed.

Contract No. 504R—For reconditioning of portions of the 36-inch Alameda pipe line in San Mateo and Belmont. The contract was awarded to American Pipe and Construction Company on December 27, 1948, and was completed on March 15, 1949, at a cost of $68,589.39.

Contract No. 521—For installation of a 10-inch service to the Royal Container Company, Millbrae, California. The contract was awarded to E. T. Haas Company on June 27, 1949, at an estimated bid price of $8,625.00. On June 30, 1949, work had not been started on this contract.

4. Informal Contracts:

The following work, involving amounts of less than $2,000, were done under a service order issued after posting a bid invitation and receiving informal bids.

Informal Bid No. 82—For moving "Macco" Field Office to the Millbrae Pumping Station lot. The work was performed by N. O. Wiseth and was completed on August 26, 1948, at a cost of $1,999.50.

Informal Bid No. 83—For painting of the eighth floor and part of the third floor of the Water Department Building at 425 Mason Street, San Francisco. This contract was awarded to A. Quandt and Sons and work was completed on July 14, 1948, at a cost of $333.00.

Informal Bid No. 84—For cleaning and painting of certain Engineering and Laboratory rooms at Millbrae. The informal bid of A. Quandt and Sons was accepted and the work was completed September 10, 1948, at a cost of $537.00.

Informal Bid No. 85—For painting rooms 408 and 703 in the Water Department Building, 425 Mason Street, San Francisco. The contract was awarded to A. Quandt and Sons and was completed January 27, 1949, at a cost of $180.00.

AGRICULTURAL DIVISION

On July 1, 1949, the area of land owned in fee was 63,606.924 acres, which was 79.853 acres more than the acreage shown in the Annual Report of June 30, 1948. This increase is made up as follows:

	Acres	Acres
Purchases:		
Land for Sunset Supply Line		11.222
Land for Bay Division Pipe Line		24.746
Land for Crystal Springs Filtration Plant		79.950
Sales:		
Parcel 55, Portion of Lake Merced Lands	31.928	
Parcel 56, Portion of San Mateo Lands	3.341	
Parcel 13, Block 57, Portion of Western Addition	0.298	
Parcel 49, Block 2044, Portion of Lake Honda Tract	0.013	
Parcel 12, Lot 1, Block 451, Black Point Pump Lot	0.485	
	36.065	115.918
Net Increase in Acres	79.853	

Of the total acreage 35,450 acres, more or less, are leased under 155 leases. The total acres leased are as follows:

Kind of Lease	Leased Acreage	No. of Leases	Income
Agricultural:			
Cattle	29,718.000	15	$90,889.37
Flat Rate	1,715.532	59	14,233.97
Share Crop	3,719.780	13	21,148.73
Non-Agricultural:			
Flat Rates	97.720	64	7,535.52
Olympic Club Golf Course	17.350	1	2,400.00
Royalties—Rock Quarry	10.000	1	24,277.24
Royalties—Lake Merced Boating and Fishing	.....	1	1,957.75
Royalties—Crystal Springs Golf Course	172.530	1	9,640.04
Taxes Paid by Tenants	.....	..	200.77
	35,450.912	155	$172,283.39
Walnut Orchard:			
Sale of Walnuts	100.000	0	39,896.52
	35,550.912	155	$212,179.91

Cattle Leases:

During the year 1948-49 there were 15 cattle leases in effect with a total area of 29,718 acres under lease. The rentals during the year increased 168 per cent over the base rentals, bringing in an income of $90,889.37, or an increase of $33,874.95 over the previous year.

The cattle leases were renewed to run for a period of five years from November 1, 1948. Rentals are based on a sliding scale according to sale prices of cattle during specified periods in each year, with the basic rentals stipulated in each lease.

This method of basing rentals on a sliding scale is in accord with our established practice, the cattlemen paying a higher rental when cattle prices are high and a correspondingly lower amount when lower prices prevail. Cattlemen, generally, seem to be agreeable to this method of adjusting rentals. High prices for beef cattle still continue, but are likely to recede during the year 1949.

Rainfall was exceedingly light during the winter months, causing much concern to cattlemen in general as well as an earlier than usual movement of range cattle to markets, so that really good top grade quality has been lacking to a large degree. Heavy sales of beef cattle and even breeding stock occurred in the winter of 1948 due to fear of both feed shortage and drought conditions.

Most of the cattle leases were renewed by the Agricultural Division, before expiration, with consequent material advances in rentals for the new five year period. Lease provisions advocate erosion control, disease prevention, replanting and installation of drinking water storage for cattle.

Share Crops:

Thirteen leases on a share crop basis, covering an area of approximately 3,719.78 acres, yielded an income of $21,148.73. Some lessees paid a cash rental in addition to the share of crops. The principal crops raised were oats, barley, wheat and vetch hay, and barley and wheat grain, all of which were sold at good prices. However, farm products generally in 1949 are undergoing a considerable drop in prices.

Two hundred acres of additional city lands, of the Sunol Irrigable Lands tract, are to be graded and leveled by a new tenant for the purpose of growing about one hundred acres of alfalfa. One hundred acres of strawberries are doing well. The City receives a basic cash rent and one-quarter of the crop for the alfalfa and a straight cash rent for the strawberry land.

The 100 acres at Sunol, which were leveled, limed, fertilized and planted to strawberries, show marked growth and vigor. The clay loam soil does not require heavy irrigating and is retentive of moisture for both the strawberries and the 40 acres of interplanted walnut trees. The early maturing early bearing Payne walnut variety, alternated with the reliable Franquette and Hartley Franquette walnut varieties, starts the City's income five years earlier by this type of Payne interplanting. All of these strawberry vines and walnut trees are making a very satisfactory growth.

The growing of berries between young walnut trees, for the first four years of young tree growth, provides a combination of leveling, fertilizing, cultivating and especially irrigating the City's young trees by the strawberry tenant without extra cost to the City.

Walnut Orchard:

The gross value of the walnut crop amounted to $39,896.52, an increase of $23,196.41 over the previous year, due mainly to ample irrigation and care.

Ammonia application and liming of ground took the place of vetch planting for the young orchard and the same was applied to some dieback spots in the old orchard.

This year, due to the past four dry seasons, a practical contour and square-check system of irrigation was used and a heavy irrigation was given to the orchard.

Fencing and Boundary Lines:

Fencing work on the properties was confined to the usual repairs and upkeep of boundary fences. All labor was furnished by the tenants and material was furnished by the department.

Care of Property:

Morning glory and mustard infestation is being considerably retarded in hay lands and the 105 acres of strawberry lands. Infestations have been practically eliminated in the one hundred acre walnut orchard at Sunol but morning glory needs eradication on the Pleasanton properties.

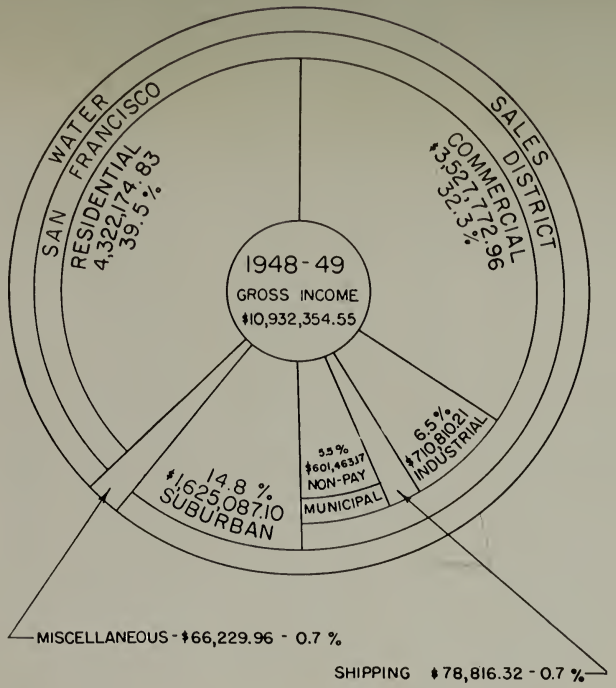
Good cooperation is generally experienced between the Agricultural Division personnel and the tenants in arriving at decisions and agreements. Fertilizers, to be used by the tenants on City land needing same, are discussed and their use agreed upon to the mutual advantage of the parties involved.

Sanitary provision measures are strictly enforced in all leases to insure against water pollution.

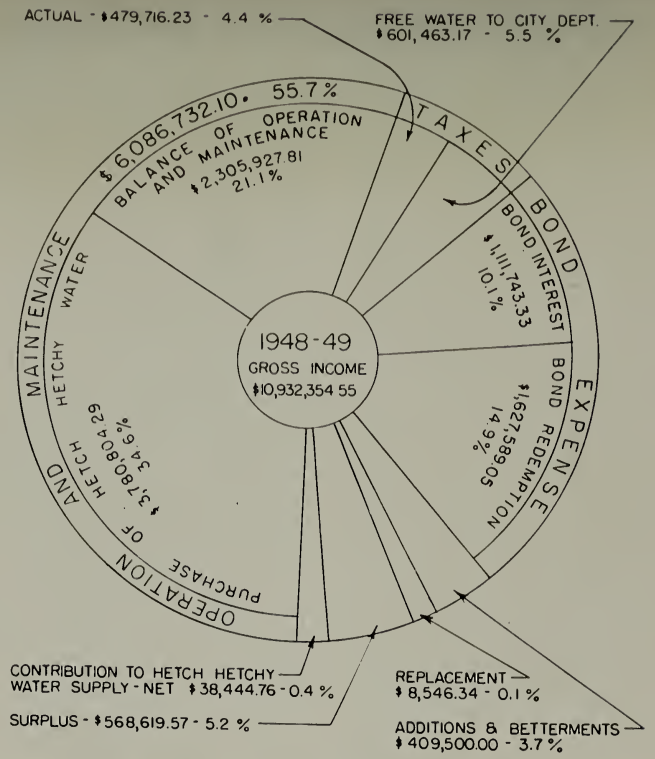
WALNUT CROP AND VALUE DURING CITY OWNERSHIP

	Total Yield Pounds	Gross Value	Net Cash Received	Association Charges % of Gross *	Packing House Charges per Lb.
1930	110,361	$23,905.44	$20,024.55	16.23	$.0138
1931	91,570	13,778.73	12,272.73	10.93	.0091
1932	206,795	28,994.25	20,391.18	29.67	.0070
1933	153,080	23,635.21	17,905.45	24.24	.0073
1934	136,672	18,039.52	13,236.00	26.63	.0059
1935	209,095	27,359.11	22,719.87	16.96	.0045
1936	187,605	27,865.13	24,947.57	10.47	.0046
1937	179,954	23,808.71	21,102.05	11.37	.0042
1938	258,934	36,812.05	31,801.16	13.61	.0090
1939	153,770	12,747.35	11,366.74	10.83	.0124
1040	90,148	13,570.25	11,671.08	14.00	.0100
1941	239,062	37,182.09	29,807.07	19.83	.0088
1942	254,594	45,744.85	44,000.73	3.81	.0068
1943	188,590	49,552.64	48,373.84	2.38	.0082
1944	107,831	29,487.66	26,901.72	8.77	.0138
1945	214,919	62,893.03	58,474.64	7.03	.0126
†1946	240,883	73,017.57	73,017.57	0	0
†1947	81,167	16,700.11	16,700.11	0	0
†1948	196,529	39,896.52	39,896.52	0	0
Prior Year's Adjustments	.....	3,431.54	3,431.54		
	3,301,559	$608,421.76	$548,042.12		

*Includes cost of surplus control, operating reserve and revolving fund in addition to actual Association charges for marketing expense.
†Sold under competitive bids.



SOURCE OF INCOME
FISCAL YEAR ENDING JUNE 30, 1949



DISPOSITION OF GROSS INCOME
FISCAL YEAR ENDING JUNE 30, 1949

ACCOUNTING AND AUDITING

The accounts of the San Francisco Water Department are maintained strictly in accordance with the requirements of the State Public Utilities Commission and Section 64 of the Charter, and the accounts of the Department have been so coordinated with the Controller's system that no encumbrance or expenditure against budget estimates can be incurred without prior certification from the Controller that funds are available. As provided in Ordinance 9.0621, an annual audit of the Department is made as of June 30 by a firm of certified public accountants. The accountant's report is not available at the time the Department's financial statement goes to press, hence there may be minor differences between the two reports due to reclassifications made by the accountants.

COMMENTS ON FINANCIAL STATEMENTS

An analysis of the disposition of Earned Surplus, together with additions thereto and deductions therefrom is shown in the body of these comments.

The following financial statements and cost reports are presented:

Balance Sheet June 30, 1949 (Exhibit A).

Income statement for the years ended June 30, 1948, and June 30, 1949 (Exhibit B).

Surplus Account June 30, 1949 (Exhibits C and D).

Comparative Statement of Operating Expenses for fiscal years 1947-48 and 1948-49 (Exhibit E).

Operating Expenses for past four fiscal years (Schedules Nos. 1, 2, 3 and 4).

Additions, Betterments and Replacements for fiscal year 1948-49 (Schedule No. 5).

Agricultural Division, Receipts and Expenses for past five years (Schedule No. 6).

Sales of water for the fiscal year 1948-49 were $10,932,354.55 as against $10,614,577.04 for prior year, an increase of $317,777.51.

Other Income amounts to $245,593.36 as against $179,915.15 for prior year, an increase of $65,678.21. The principal causes for this increase are due to increase in rental received from cattle leases, $33,874.95, and revenue from sale of walnuts, $23,196.41.

Operating Expenses show a net increase of $549,900.97 due to several factors of which the principal ones are: Standby Charge and Purchase of Water $247,-104.29, Repairs to Transmission and Distribution Mains $79,226.02, Major Repairs to Alameda Supply Line $75,852.36, Taxes Paid to Other Cities and Counties $104,693.66.

Following is a statement showing increases and decreases in Operating Expenses for the year under review:

Operating Expenses:	Increase	Decrease
Source of Supply	.....	$47,210.62
Standby Charge and Purchase of Water	$247,104.29	.....
Pumping	39,513.27	.....
Purification	1,420.65	.....
Transmission and Distribution	79,339.32	.....
Commercial Division	32,640.15	.....
Administrative and General	79,226.02	.....
Taxes—Actual	104,693.66	.....
Provision for Doubtful Accounts	.....	300.00
Provision for Depreciation	.....	2,429.85
Municipal Taxes—Comparison*	15,904.08	.....
Net Increase	.....	549,900.97
	$599,841.44	$599,841.44

Other Operating Expenses decreased $56,667.34 due to retirement of $1,563,000.00 in bonds, amounting to a decrease in Interest Charges of $67,520.01. An increase in Walnut Orchard expenses of $8,348.08 and other small items amounting to $2,504.59 accounts for the difference.

*Water delivered to Municipal Departments offset by taxes.

DISPOSITION OF EARNED SURPLUS

Exhibits C and D show surplus for past twelve months and composition of surplus accumulated to date. Following is a statement of the disposition of surplus arising from operations, together with additions and deductions not strictly confined thereto:

Surplus—	To June 30 1948	Year 1948-49	To June 30, 1949
Contributed to:			
General Fund	$15,992,457.24	.....	$15,992,457.24
Hetch Hetchy Water Supply	4,472,996.10	$38,444.76	4,511,440.86
Hetch Hetchy Power	1,228.59	.....	1,228.59
1947 Hetch Hetchy Bond Fund	5,886.54	.....	5,886.54
Appropriated for:			
Bond Redemption—Spring Valley	18,000,000.00	1,000,000.00	19,000,000.00
Bond Redemption—1933 Water Distribution	6,472,594.33	563,000.00	7,035,594.33
1947 Hetch Hetchy Bond Fund	.....	64,589.05	64,589.05
Additions and Betterments	12,180,480.79	409,500.00	12,589,980.79
Additions and Betterments—Lake Merced Project	1,250,000.00	.....	1,250,000.00
Purchase of Land	22,858.50	.....	22,858.50
Other Purposes	100,429.29	.....	100,429.29
Surplus	*987,547.56*	568,619.67	*418,927.89*
Add:	$57,511,383.82	$2,644,153.48	$60,155,537.30
Initial Earnings—Excess Earnings—Spring Valley Water Company	$4,152,652.24	.....	$4,152,652.24
Valuation Municipal Water Works	100,000.00	.....	100,000.00
Grants Earned on Federal Projects	2,358,987.60	.....	2,358,987.60
Surplus Material and Equipment from Construction Projects	381,367.16	*$7,546.60*	373,820.56
Land Sales—Profit	394,376.53	55,969.44	450,345.97
Bond Premiums	821,684.38	.....	821,684.38
Palo Alto Pipe Line	332,271.90	.....	332,271.90
Miscellaneous Additions	257,383.08	76,347.36	333,730.44
Bay Bridge Pump and Supply Line	120,423.26	.....	120,423.26
Deduct:	$8,919,146.15	$124,770.20	$9,043,916.35
Contribution to General Fund	$15,992,457.24	.....	$15,992,457.24
Deficit County Line Water Works	19,189.15	.....	19,189.15
Payment to Spring Valley Water Company for purpose of enabling City to take over Properties in Advance	745,274.31	.....	745,274.31
Lands Contributed to City	172,564.67	.....	172,564.67
Contribution to Other Public Service Enterprises	4,477,166.10	.....	4,477,166.10
Miscellaneous Deductions from Surplus	200,513.05	59,807.44	260,320.49
Depreciation due to Revaluation	8,482,295.33	.....	8,482,295.33
Depreciation not Funded (Accrued since 3/3/30)	8,696,058.80	880,791.27	9,576,850.07
	$38,785,518.65	$940,598.71	$39,726,117.36
	$27,645,011.32	$1,828,324.97	$29,473,336.29

Italic figures denote loss and deficiency.

EXHIBIT "A"

BALANCE SHEET—JUNE 30, 1949

ASSETS

Fixed Capital:		
In Service	$77,913,480.67	
Less Provision for Depreciation	29,206,029.24	
	$48,707,451.43	
Construction in Progress	474,106.65	$49,181,558.08
Cash:		
Treasurer's Balance, Schedule Annexed	$4,833,625.25	
Revolving Fund	30,000.00	
Other Cash	.....	4,863,625.25
Accounts Receivable:		
Consumers' Accounts	$816,176.62	
Less Reserve for Losses	4,000.00	
	$812,176.62	
Other Accounts Receivable	18,494.07	830,670.69
Interfund Accounts:		
Schedule Annexed:		
Public Service Enterprises	$213,533.98	
General City and County	77.93	213,611.91
Deferred Charges:		
Materials and Supplies	$811,531.60	
Reserve Fund Expenditures Unbilled	158,909.01	
Misc. Jobbing and Sales Accounts, etc.	737.11	
Public Utilities Commission	1,611.92	972,789.64
Total Assets		$56,062,255.57

LIABILITIES

Bonded Debt:		
Spring Valley Water Bonds, 1928	$22,000,000.00	
Water Distribution Bonds, 1933	2,809,000.00	
	$24,809,000.00	
Matured, not presented for payment:		
Spring Valley, 1928	9,000.00	$24,818,000.00
Bond Interest Payable:		
Accrued, not due:		
Spring Valley Water Bonds, 1928	$495,000.00	
Water Distribution Bonds, 1933	9,363.33	
	$504,363.33	
Matured, not presented for payment:		
Spring Valley, 1928	11,452.50	
Water Distribution, 1933	3,000.00	518,815.83
Expenditures made by the 1947 Hetch Hetchy Bond Fund for the San Francisco Water Department		393,205.62
Accounts Payable:		
Warrants Outstanding:		
Schedule Annexed	$133,844.43	
Consumers' Deposits and Advances	204,717.27	
General Creditors	277,536.86	
Accrued Payroll	22,782.91	638,881.47
Interfund Accounts:		
Schedule Annexed:		
Public Service Enterprises	$38,259.72	
General City and County	53,177.96	91,437.68
Deferred Credits:		
Reserve for Compensation Insurance	$75,569.10	
Reserve for Unpaid Revolving Fund Checks	4,019.97	
Other Deferred Credits	48,989.61	128,578.68
Surplus:		
Schedule Annexed		29,473,336.29
Total Liabilities		$56,062,255.57

EXHIBIT B
INCOME ACCOUNT
Twelve Months Ending June 1949 and 1948

	Twelve Months Ending June 30		Increase or	Cumulation from March 3, 1930 to
	1949	1948	*Decrease*	June 30, 1949
Sale of Water:				
San Francisco	$8,647,945.18	$8,541,113.48	$106,831.70	$130,324,812.58
Outside of San Francisco	1,625,087.10	1,432,855.61	192,231.49	12,307,841.70
Municipal Departments—Actual	57,859.10	55,048.86	2,810.24	1,139,778.72
Municipal Departments—Comparison*	601,463.17	585,559.09	15,904.08	8,743,539.39
	$10,932,354.55	$10,614,577.04	$317,777.51	$152,515,972.39
Operating Expenses:				
Source of Water Supply	$291,178.95	$338,389.57	*$47,210.62*	$4,932,394.25
Standby Charge and Purchase of Water	3,780,804.29	3,533,700.00	247,104.29	15,126,081.29
Pumping	395,500.61	355,987.34	39,513.27	4,973,541.59
Purification	102,347.81	100,927.16	1,420.65	1,185,342.90
Transmission and Distribution	639,210.76	559,871.44	79,339.32	6,738,021.73
Commercial Division	596,141.83	563,501.68	32,640.15	7,527,730.81
Administrative and General	457,706.46	378,480.44	79,226.02	5,917,133.47
Taxes—Actual	479,716.23	375,022.57	104,693.66	5,296,242.57
Provisions for Doubtful Accounts	3,300.00	3,600.00	*300.00*	232,237.07
Provision for Depreciation	889,337.61	891,767.46	*2,429.85*	20,044,615.28
Municipal Taxes—Comparison*	601,463.17	585,559.09	15,904.08	8,759,778.11
	$8,236,707.72	$7,686,806.75	$549,900.97	$80,733,119.07
Profit from Operations	2,695,646.83	2,927,770.29	*232,123.46*	71,782,853.32
Other Income:				
Rentals, including Crop Shares	$180,441.39	$136,013.71	$44,427.68	$1,402,459.99
Interest Earned	13,094.14	9,375.08	3,719.06	413,866.47
Sale of Walnuts	39,896.52	16,700.11	23,196.41	608,421.76
Miscellaneous	12,161.31	17,826.25	*5,664.94*	192,011.79
	$245,593.36	$179,915.15	$65,678.21	$2,616,760.01
Other Expenses:				
Bond Interest	$1,111,743.33	$1,179,263.34	*$67,520.01*	$31,643,594.70
Agricultural Division	21,864.43	19,896.31	1,968.12	290,848.82
Walnut Orchard Expense	27,248.72	18,900.64	8,348.08	381,859.40
Miscellaneous	1,766.77	1,230.30	536.47	72,146.11
	$1,162,623.25	$1,219,290.59	*$56,667.34*	$32,388,449.03
Net Income	$1,778,616.94	$1,888,394.85	*$109,777.91*	$42,011,164.30

*Water Service to Municipal Departments offset by Municipal Taxes.

Italic figures denote loss and deficiency.

EXHIBIT C
SURPLUS ACCOUNT
For Twelve Months Ending June 30, 1949

Surplus—June 30, 1948		$27,645,011.32
Add:		
Net Income for Twelve Months ending June 30, 1949	1,778,616.94	
Miscellaneous Additions to Surplus	148,447.83	
Contributions to Hetch Hetchy Water Supply	38,444.76	$29,610,520.85
Deduct:		
Miscellaneous Deductions from Surplus	$72,595.51	
Contributions to 1947 Hetch Hetchy Water Bond Fund	64,589.05	137,184.56
Surplus—June 30, 1949		$29,473,336.29

SAN FRANCISCO WATER DEPARTMENT
EXHIBIT D

COMPOSITION OF SURPLUS—CONDENSED
June 30, 1949

Initial Surplus—March 3, 1930:			
Amortization on Contribution (Spring Valley)	$4,152,652.24		
Valuation of Municipal Water Works	100,000.00		
	$4,252,652.24		
Less: Additional Allowance for Depreciation—			
March 1, 1920 to March 3, 1930	2,327,916.67	$1,924,735.57	
Additions:			
Net Profit—March 3, 1930 to June 30, 1949	$42,011,164.30		
Miscellaneous and Year to Year Adjustments	4,331,372.67	46,342,536.97	
Grants earned on Federal Public Works Projects		2,358,987.60	
Year to Year—Additions to Surplus to June 30, 1949		1,504,481.49	$52,130,741.63
Deductions:			
Contributions to General Fund		$15,992,457.24	
Contributions to 1947 H. H. Water Bond Fund	$70,475.59		
Contributions to H. H. Water Supply	4,430,204.34		
Contributions to H. H. Power Division	1,228.59	4,501,908.52	
Land Contributed:			
To City and County of San Francisco for Streets and Boulevards		172,564.67	
Excess of Adjusted Book Value of Plant Appraisal—December 31, 1937		1,990,474.91	22,657,405.34
Surplus—June 30, 1949			$29,473,336.29

EXHIBIT E

COMPARATIVE STATEMENT OF OPERATING EXPENSES

For the Fiscal Years Ended June 30, 1949 and June 30, 1948

	Fiscal Year Ended June 30 1949	1948
Source of Water Supply Expenses:		
Superintendence	$44,569.85	$39,244.62
Operating Labor	62,675.92	57,084.89
Operating Supplies and Expenses	30,202.68	20,946.28
Repairs and Maintenance—Buildings, Fixtures and Grounds	115,795.08	153,900.68
Repairs—Surface Facilities	37,935.42	67,213.10
	$291,178.95	$338,389.57
Pumping Expenses:		
Labor—Pumping	$86,536.29	$73,001.69
Labor—Miscellaneous	18.09	209.40
Fuel for Steam	57,807.07	48,687.22
Power Purchased	207,203.53	194,048.25
Lubricants	277.40	199.01
Miscellaneous Supplies and Expense	19,412.14	15,930.96
Repairs—Primary Pumping Equipment	16,715.97	13,255.14
Repairs—Boilers and Equipment	434.57	659.46
Repairs—Miscellaneous Equipment	2,689.96	5,693.38
Repairs—Building Fixtures and Grounds	4,405.59	4,302.83
	$395,500.61	$355,987.34
Purification Expenses:		
Superintendence and Labor	$40,001.02	$37,503.62
Supplies and Expense	57,401.75	59,261.47
Repairs—Plant, Structures and Equipment	4,695.06	3,834.56
Repairs and Maintenance—Roads and Trails	249.98	327.51
	$102,347.81	$100,927.16
Transmission and Distribution Expenses:		
Superintendence	$59,593.23	$54,335.64
Patrolling Storage Facilities	19,131.02	20,472.13
Meters and Fittings Department	84,839.74	80,368.50
Street Department	25,964.76	23,045.85
Consumers' Premises Expenses	27,890.55	27,146.67
Miscellaneous Supplies and Expenses	18,745.70	16,597.39
Repairs—Transmission Mains and Canals	53,874.86	42,446.89
Repairs—Reservoirs, Tanks and Standpipes	5,322.14	3,333.30
Repairs—Distribution Mains and Canals	105,057.71	123,401.95
Repairs—Service Connections	146,258.40	123,552.34
Repairs—Distribution Buildings and Grounds	34,135.42	34,820.20
Repairs—Distribution Equipment	5,604.04	9,265.49
Reconstruct and Relocate Pipe Lines and Services	52,793.19	1,085.09
	$639,210.76	$559,871.44

EXHIBIT E—Continued

	Fiscal Year Ended June 30 1949	1948
Commercial Expenses:		
Collections	$166,236.27	$154,133.75
Reading Meters	86,873.57	83,179.95
Bookkeeping Department	173,824.09	165,276.57
General	68,714.13	64,523.80
Inspection and Service	74,808.24	71,761.71
Shipping	25,685.53	24,625.90
	$596,141.83	$563,501.68
Administrative and General Expense:		
Salaries—General Officers	$19,843.06	$19,323.32
Salaries—General Office Clerks	60,623.82	56,756.11
Miscellaneous Supplies and Expenses	4,546.79	28,695.72
Injuries and Damages	7,657.81	5,182.79
Retirement System Contributions	79,268.12	75,542.50
Mason Street Building Expense	36,125.76	30,941.38
Telephone Service	23,771.71	23,493.98
Guest Cottages and Rest Room	2,968.52	2,998.78
General Engineering	52,480.85	50,065.08
Hydrography	956.16	1,078.97
Miscellaneous	2,075.21	2,021.38
Compensation Insurance	10,171.08	10,674.50
Other Insurance	2,253.47	8,624.43
Repairs—Mason Street Building	3,924.94	5,155.09
Repairs—Telephone System	12,619.12	10,254.22
Professional Services	3,714.29	5,000.00
Public Utility Commission Expense	44,494.21	42,672.19
Property Taxes (Outside of San Francisco)	479,716.23	375,022.57
	$847,211.15	$753,503.01
Repairs—Extraordinary: Remodeling Fifth Floor, Mason Street Building	$14,359.18	
Repairs—Extraordinary—Recondition Alameda Supply Line	75,852.36	
	$937,422.69	$753,503.01

SCHEDULE No. 1

OPERATING EXPENSES

	1945-46	1946-47	1947-48	1948-49
RESERVOIRS AND SOURCES				
Inside of San Francisco:				
Lake Merced	$3,580.67	$4,884.92	$4,595.16	$4,558.12
Outside of San Francisco:				
Surface Sources				
San Andres Reservoir	$12,217.08	$16,737.26	$18,931.31	$15,487.12
Crystal Springs Reservoir	38,072.03	38,631.50	47,274.77	40,403.68
Pilarcitos Reservoir	43,185.50	15,151.75	21,456.09	33,673.10
Calaveras Reservoir	9,670.68	10,572.42	14,664.80	11,344.55
	$103.145.29	$81,092.93	$102,326.97	$100,908.45
Ground Sources				
Sunol Filter Beds	7,706.45	6,639.12	14,673.85	16,741.14
Pleasanton Wells	224.41	1,002.78	9,544.51	15,999.06
	$7,930.86	$7,641.90	$24,218.36	$32,740.20
Supply Lines and Aqueducts:				
Bay Division Pipe Lines	$8,177.38	$39,378.09	$52,729.93	$29,994.11
Stone Dam Aqueduct	1,335.56	7,386.40	12,137.85	8,051.86
Niles-Irvington Pipe Line	2,350.10	3,056.20	2,787.69	2,228.48
Upper Alameda Creek Diversion Dam	1,200.03	.....	.....	.....
Calaveras Pipe Line	534.35	.....	.....	.....
Other Supply Lines and Aqueducts	1,501.87	2,620.23	4,897.83	3,984.39
	$15,099.29	$52,440.92	$72,553.30	$44,258.84
Alameda System—General Expenses	$22,332.51	$26,602.91	$28,112.19	$31,387.89
Peninsula System—General Expenses	65,143.91	84,525.85	106,583.59	77,325.45
	$87,476.42	$111,128.76	$134,695.78	$108,713.34
Total Source of Supply Expense	$217,232.53	$257,189.43	$338,389.57	$291,178.95

SCHEDULE No. 2
OPERATING EXPENSES

PUMP STATIONS	1945-46	1946-47	1947-48	1948-49
Inside of San Francisco:				
Steam Plants				
Central	$63,066.18	$77,853.55	$95,926.35	$108,702.87
City	22.46	637.56	43.48	65.93
Clarendon Height	564.36	473.70	630.70	503.17
	$63,653.00	$78,964.81	$96,600.53	$109,271.97
Electric Pumps				
Francisco Street	.....	.....	$9,119.51	$3,279.85
Alemany	631.83	$23,706.90	48,356.44	41,126.45
Bay Bridge Pump—Treasure Island	13,561.24	9,142.52	7,590.99	6,656.97
Daly Hill	.....	176.06	2.40	.....
Forest Hill	5,808.72	6,233.20	6,449.05	7,717.55
Potrero Heights	365.90	271.18	485.23	769.03
Newcomb Avenue	5,089.30	5,421.77	5,879.16	6,046.11
Hillside	271.55	414.79	58.74	.....
Fairview	2,225.80	604.73	687.09	510.87
Lincoln Park	386.58	750.35	1,180.33	920.91
Palo Alto	.....	111.47	383.91	337.09
Twin Peaks	617.38	712.29	597.30	691.23
Lake Honda Booster	.....	.....	388.20	709.44
Sunset Booster	404.49	448.59	604.51	300.99
Sunset Source	45.93	101.52	.....	16.25
Olmstead and University	722.43	732.53	1,417.62	2,050.51
Bernal Heights	342.92	372.15	402.89	394.27
St. Germain	374.25	908.48	27.79	.....
General	1,029.46	539.90	869.27	818.10
	$31,877.78	$50,648.43	$84,500.43	$72,345.62
Total Inside of San Francisco	$95,530.78	$129,613.24	$181,100.96	$181,617.59
Outside of San Francisco:				
Baden	$39,334.84	$6,598.86	$3,854.98	$1,505.96
Belmont Pump	41.87	.....	.....	.....
Millbrae Pump	119.74	.....	.....	.....
Crystal Springs Pump	91,033.38	102,347.97	134,732.10	139,749.97
Bay Division Pump	2,667.23	1,883.56	2,108.75	2,601.63
Pleasanton Pump	687.04	959.98	7,405.88	18,051.10
Pleasanton Township Water District	900.00	1,811.84	2,039.70	3,549.09
Irvington Pump	.....	.....	24,744.97	48,425.27
San Lorenzo Pump	67.58	.....	.....	.....
Total Outside of San Francisco	$134,851.68	$113,602.21	$174,886.38	$213,883.02
Total Pumping Expenses	$230,382.46	$243,215.45	$355,987.34	$395,500.61

SCHEDULE No. 3
OPERATING EXPENSES

PURIFICATION EXPENSES	1945-46	1946-47	1947-48	1948-49
Inside of San Francisco:				
College Hill	$975.75	$1,069.34	$1,387.69	$1,302.03
Lake Honda	31.95	4.12	14.54	234.93
Lombard Street	60.82	67.37	289.06	259.45
Sunset	174.16	207.63	161.08	220.95
University Mound	1,251.26	1,051.80	751.60	1,050.52
Lake Merced	42.64	147.17	442.49	1.06
Total Inside of San Francisco	$2,536.58	$2,547.43	$3,046.46	$3,068.94
Outside of San Francisco:				
San Andres Reservoir	$3,557.27	$4,504.78	$5,937.73	$6,320.66
Crystal Springs Reservoir	6,837.14	6,918.83	13,900.84	6,031.67
Calaveras Reservoir	14,338.92	14,211.36	15,667.98	13,910.53
Sunol Purification System	925.44	905.20	1,461.99	2,176.73
Other Outside Stations	204.94	477.17	441.49	105.30
Coast Range Division, H. H. W. S.	17,825.20	17,084.43	23,266.78	24,474.68
Millbrae Laboratory	35,834.50	36,435.98	37,203.89	46,259.30
Total Outside of San Francisco	$79,523.41	$80,537.75	$97,880.70	$99,278.87
Total Purification Expenses	$82,059.99	$83,085.18	$100,927.16	$102,347.81

SCHEDULE No. 4
OPERATING EXPENSES

TRANSMISSION AND DISTRIBUTION	1945-46	1946-47	1947-48	1948-49
Inside of San Francisco:				
City Transmission Lines	$203.13	$2,784.19	$5,614.17	$6,827.17
Reconstruct and Relocate Pipe Lines	.....	.....	1,085.09	52,793.19
City Distribution Reservoirs	31,794.44	39,426.37	46,816.16	47,299.90
Meter Expenses	41,576.76	49,167.73	65,589.71	67,768.68
Street Department Expenses	19,851.36	21,902.69	23,045.85	25,964.76
Main Repairs	97,894.67	118,785.40	123.342.90	104,690.73
Service Connection Repairs	87,946.87	119,388.39	123,552.34	146,207.17
Repairs to Buildings and Equipment	2,245.60	4,167.28	9,265.49	5,604.04
Operation of Corporation Yard	356.10	8,291.39	14,541.72	16,356.98
Consumers' Premises Expenses	22.917.27	27,049.75	27,146.67	27,890.55
Superintendence	44,664.13	49,853.69	54,335.64	59,593.23
Total Inside San Francisco	$349,450.33	$440,816.88	$494,335.74	$560,996.40
Outside of San Francisco:				
Alameda Supply Line—Alameda Division	$306.47	$479.00	$1,271.90	$2,116.65
Alameda Supply Line—Peninsula Division	1,011.77	347.64	482.35	871.17
Alameda Transmission Line	5,981.05	11,970.02	9,041.15	16,543.94
Sunset Transmission Line	.....	.....	....	74.55
Crystal Springs Pump Aqueduct	5,113.79	5.892.67	5,042.09	10,400.85
New Crystal Springs Transmission Line	5,105.75	9,385.35	6,765.35	9,242.38
Old Crystal Springs Transmission Line	5,331.70	7,536.34	7.986.73	7,012.02
San Andres Trans. Line No. 1, to College Hill	1,042.94	6.932.61	5,476.16	6,152.82
San Andres Trans. Line No. 2, to Lake Honda	2,691.89	2,713.93	6,384.14	3,648.66
San Andres Trans. Line No. 3, to Merced Manor	1,692.08	1,697.53	3,097.96	1,382.58
Palo Alto Pipe Line	62.35	71.82	15.11	34.51
Niles Regulating Reservoir	3,421.90	3,476.99	3,682.20	3,499.30
Pleasanton Transmission Line	2.97	173.00	1,511.77	163.87
Meter Expense, Peninsula Division	8,722.39	12,041.64	14,555.59	16,110.03
Meter Expense, Alameda Division	.....	159.43	223.20	961.03
Total Outside of San Francisco	$40.487.05	$62,877.97	$65,535.70	$78,214.36
Total Transmission and Distrib. Exp.	$389,937.38	$503,694.85	$559,871.44	$639,210.76

SCHEDULE No. 5
ADDITIONS, BETTERMENTS AND REPLACEMENTS

Acct. No.	Cont. No.	Name	Retirements	Additions	Engineering Office	Engineering Field	Account	Contracts	Materials and Supplies	Contractual Service	Equipment	Miscellaneous
1015		Landed Capital:										
		Purchase of Land	.....	$295,558.07	.....	.....	.....	.....	.....	.....	.....	$295,558.07
		Sale of Land	$90,038.56	.....	.....	.....	.....	.....	.....	.....	.....	.....
1020		Irvington Pump Station	.....	$15,779.05	$752.96	$515.23	.....	.....	.....	.....	$14,510.86	.....
	496	Irvington Surge Tank	.....	3,661.76	.....	789.76	.....	$2,747.97	.....	.....	124.03	.....
		Sunol Gasoline Pump	.....	304.43	.....	.....	.....	.....	.....	.....	304.43	.....
		Addn. to Tesla Portal Chlor. Sta.	.....	1,476.90	.....	.....	$1,476.90	.....	.....	.....	.....	.....
		Total Buildings, Structures and Grounds	.....	$21,222.14	$752.96	$1,304.99	$1,476.90	$2,747.97	.....	.....	$14,939.32	.....
1025	466	Pleasanton Water Supply	.....	$141,577.45	$4,000.00	$2,708.47	.....	$26,537.03	$44,665.31	$8,556.64	$43,310.00	$11,800.00
		Calaveras Intake Screen	.....	16,396.28	460.73	1,498.51	.....	11,618.29	2,818.75	.....	.....	.....
		San Mateo Dam No. 2 Diversion Flume	.....	1,176.24	.....	.....	$633.45	.....	.....	.....	542.79	.....
		Sunset Supply Line— Baden to Sunset Reservoir	.....	2,046,953.36	41,986.47	119,245.94	.....	969,395.38	806,783.44	461.56	64,563.72	44,516.85
		Total Source of Sup. Capital	.....	$2,206,103.33	$46,447.20	$123,452.92	$633.45	$1,007,550.70	$854,267.50	$9,018.20	$108,416.51	$56,316.85
1030		Pumping Station Equipment	$1,110.00	$3,437.62	.....	.....	.....	.....	.....	.....	$3,437.62	.....
1035		Chlorination Equipment San Andres No. 3	.....	$3,086.55	.....	.....	$465.51	.....	.....	.....	$2,621.04	.....
1040		Cast Iron Mains under $2,000	.....	$61,586.40	.....	.....	$61,586.40	.....	.....	.....	.....	.....
		Cast Iron Mains Over $2,000	.....	356,664.64	$179.03	$4,549.79	33.355.64	$159,553.38	$159,026.80	.....	.....	.....
		Install Meters	.....	97,528.88	.....	.....	78,908.18	.....	18,620.70	.....	.....	.....
		Install Services	.....	72,716.76	.....	.....	72,716.76	.....	.....	.....	.....	.....
		Cut in Gate Valves	.....	5,306.72	.....	.....	5,306.72	.....	.....	.....	.....	.....
		Equipment	.....	1,420.90	.....	.....	.....	.....	.....	.....	$1,420.90	.....
		Pipe Retired from Service	16.387.70	.....	.....	.....	.....	.....	.....	.....	.....	.....
		Total Trans. and Distrib.	.....	$595,224.30	$179.03	$4,549.79	$251,873.70	$159,553.38	$177,647.50	.....	$1,420.90	.....
1041		Replace Distrib. Mains at Sunol	.....	$16,372.39	$1,664.01	$119.32	.....	$9,619.07	$4,969.99	.....	.....	.....
1045		General Equipment	.....	26,650.29	.....	.....	.....	.....	.....	.....	$26,650.29	.....
1046		Automobile Equipment	$3,426.81	310.65	.....	.....	.....	.....	.....	.....	310.65	.....
		Total Year 1948-1949	$110,963.07	$3,167,965.34	$49,043.20	$129,427.02	$254,449.56	$1,179,471.12	$1,036,884.99	$9,018.20	$157,796.33	$351,874.92

SCHEDULE No. 6
AGRICULTURAL DIVISION
RECEIPTS AND EXPENSES

	1944-45	1945-46	1946-47	1947-48	1948-49
Receipts, Agricultural:					
Rentals—Cattle Leases	$36,632.59	$41,223.30	$45,227.57	$57,014.42	$90,889.37
Rentals—Flat Rates	11,338.28	12,029.56	9,455.46	10,652.41	14,233.97
Rentals—Share Crops	12,990.91	11,850.08	18,113.57	21,550.79	21,148.73
Receipts, Non-Agricultural:					
Rentals—Flat Rates	10,108.24	11,009.83	10,182.60	11,781.73	9,935.52
Taxes Paid by Tenants	156.19	295.50	236.04	840.02	200.77
Royalties	7,602.43	9,906.28	20,827.78	28,585.86	24,277.24
Sale of Walnuts	29,487.66	62,893.03	73,017.57	16,700.11	39,896.52
Miscellaneous	76.06	.....	3,646.79	5,588.48	11,597.79
Total Gross Income	$108,392.36	$149,207.58	$180,707.38	$152,713.82	$212,179.91
Expenses:					
Administration and Superintendence	$7,345.85	$6,037.91	$12,210.07	$13,461.14	$16,757.00
Miscellaneous Office Supplies and Expenses	1,132.81	343.76	432.04	237.89	212.82
Automotive Service	520.56	579.38	760.44	1,038.67	1,244.53
Share Crops:					
Storage Insurance, Handling Freight	86.96	402.90	1,010.07	511.14	505.56
Care of Properties:					
Repairs—Buildings, Structures & Grounds	1,152.66	4,674.40	3,828.55	4,647.47	3,144.52
Walnut Orchard:					
Care of Orchard	14,931.94	16,272.21	13,128.67	12,829.99	14,043.07
Crop Harvest	7,132.46	13,610.05	17,380.72	6,070.65	13,205.65
Packing House and Selling Expense	2,585.94	4,418.39	.....	.....	.....
Net Operating Expenses	$34,889.18	$46,339.00	$48,750.56	$38,796.95	$49,113.15
Net Income	$73,503.18	$102,868.58	$131,956.82	$113,916.87	$163,066.76

APPENDIX
TO
REPORT OF SAN FRANCISCO WATER DEPARTMENT

Description

Table No. 1	Maximum and Minimum Storage
Table No. 2	Water Drawn from Hetch Hetchy and Auxiliary Sources
Table No. 3	Average Daily Consumption since 1865
Table No. 4	Delivery through Pipe Lines in Million Gallons Daily
Table No. 5	Source of Water Transported Across San Francisco Bay
Table No. 6	Pipe Records, City Distribution System
Table No. 7	Valve Records, City Distribution System
Table No. 8	Contract Data

TABLE No. 1

MAXIMUM AND MINIMUM STORAGE
(Exclusive of Hetch Hetchy Sources)

MILLION GALLONS

Reservoir	1945-46 Max. Apr. 10	1945-46 Min. Nov. 18	1946-47 Max. Apr. 9	1946-47 Min. Feb. 8	1947-48 Max. May 8	1947-48 Min. June 30	1948-49 Max. Apr. 6	1948-49 Min. Dec. 25
Calaveras	24,189	13,689	14,270	14,568	5,111	4,562	8,412	70
Crystal Springs	19,257	18,059	18,816	17,232	16,344	15,771	16,587	13,930
San Andres	6,028	5,730	4,915	5,273	6,143	5,859	5,905	5,041
Pilarcitos	611	444	572	423	875	684	747	519
Lake Merced	2,624	2,486	2,621	2,618	2,609	2,562	2,556	2,544
City Reservoirs	285	297	289	278	252	268	246	265
Totals	52,994	40,705	41,583	40,392	31,334	29,706	34,453	22,369

TABLE No. 2

WATER DRAWN FROM HETCH HETCHY AND AUXILIARY SOURCES
MILLION GALLONS

Source	1945-46	1946-47	1947-48	1948-49
Hetch Hetchy Water Supply	18,616	22,594	22,840	22,464
Pleasanton Wells and Sunol Filters	0	0	2,180	4,426
Sunset Wells	0	0	0	0
Totals	18,616	22,594	24,020	26,880

TABLE No. 3

AVERAGE DAILY CONSUMPTION SINCE 1865

Year	M.G.D.	Year	M.G.D.	Year	M.G.D.	Year	M.G.D.
1865	2.4	1885	17.0	1905	34.9	1925	42.6
1870	6.0	1890	20.4	1910	35.6	1928	50.1
1875	11.7	1895	19.9	1915	42.6	1929	52.1
1880	12.7	1900	25.5	1920	36.2	1930	52.1

Note: At noon on March 3, 1930 the San Francisco Water Department acquired title to the operative properties of the Spring Valley Water Company.

CONSUMPTION IN MILLION GALLONS PER DAY

Year	San Francisco	Sub-urban	Total System	Max. Day	Min. Day	Max. Month	Min. Month
1930-31	49.2	3.1	52.3	66.7	41.3	57.8	47.0
1931-32	49.3	2.8	52.1	65.6	39.6	59.4	47.5
1932-33	46.4	2.7	49.1	60.4	39.9	54.3	44.6
1933-34	47.3	2.6	49.9	64.3	39.1	53.7	45.1
1934-35	48.1	2.4	50.5	65.4	41.3	58.1	46.2
1935-36	52.3	2.5	54.8	68.0	43.0	62.1	50.3
1936-37	55.1	3.4	58.5	70.7	45.7	63.8	51.8
1937-38	53.3	5.0	58.3	72.4	46.7	65.4	53.4
1938-39	56.2	6.4	62.6	84.6	48.5	77.5	54.8
1939-40	59.6	9.0	68.6	89.5	51.6	76.6	60.9
1940-41	60.7	7.3	68.0	90.0	52.0	77.9	60.6
1941-42	63.5	7.7	71.2	94.5	53.1	85.7	61.7
1942-43	69.2	8.6	77.8	106.9	60.2	92.3	68.6
1943-44	76.1	11.4	87.5	109.9	70.4	101.1	76.8
1944-45	79.0	17.9	96.9	134.9	74.7	116.5	85.2
1945-46	83.7	17.2	100.9	131.9	72.9	115.3	88.0
1946-47	83.3	18.6	101.9	135.6	76.5	117.0	86.2
1947-48	81.3	19.7	101.0	138.3	74.2	122.6	88.0
1948-49	83.3	19.9	103.2	138.3	73.3	124.4	86.4

TABLE No. 4

DELIVERY THROUGH PIPE LINES IN MILLION GALLONS DAILY

	1945-46	1946-47	1947-48	1948-49
Water transported into San Francisco:				
San Andres 54″ Pipe Line	32.2	29.6	25.7	29.7
College Hill 30″ Supply Line	7.2	7.3	7.3	5.7
Baden-Merced Branch 30″ Pipe	9.8	8.8	8.3	10.2
Crystal Springs 44″ Pipe	12.8	10.5	9.8	9.7
Crystal Springs 60″ Pipe	21.7	27.1	30.2	28.0
Sunset Supply 60″ Pipe	...	...	...	...
Total San Francisco Consumption	83.7	83.3	81.3	83.3
Water transported from Crystal Springs to San Andres Reservoir:				
Crystal Springs Pump Aqueduct	32.1	34.6	40.0	37.5
Water transported across San Francisco Bay:				
Bay Division 60″ and 66″ Pipes	100.8	98.5	96.8	90.5
Alameda 36″ Pipe	0.0	0.0	0.0	0.0

TABLE No. 5

SOURCE OF WATER TRANSPORTED ACROSS SAN FRANCISCO BAY YEARLY AVERAGE, MILLION GALLONS DAILY

	1945-46	1946-47	1947-48	1948-49
Pleasanton Wells and Sunol Filters	0.0	0.0	5.9	12.1
Calaveras Reservoir	50.1	36.5	29.1	16.8
Hetch Hetchy Water Supply	50.7	62.0	61.8	61.5
Totals	100.8	98.5	96.8	90.5

TABLE No. 6

PIPE RECORDS
CITY DISTRIBUTION SYSTEM

Wrought Iron and Steel Pipe

Size	Total Pipe in Ground July 1, 1948	Pipe Laid 1948-49	Removed or Abandoned 1948-49	Total Pipe in Ground June 30, 1949
¾″	12,203′	0′	0′	12,203′
1″	41,561	76	150	41,487
1¼″	3,928	0	0	3,928
1½″	176,026	394	1,000	175,420
2″	299,129	268	2,388	297,009
3″	27,474	0	0	27,474
4″	3,979	0	0	3,979
5″	804	0	0	804
6″	3,809	0	0	3,809
12″	6,555	0	0	6,555
13″	456	0	0	456
16″	25,587	0	0	25,587
20″	64,730	0	0	64,730
22″	25,309	0	0	25,309
23½″	9,087	0	0	9,087
24″	41,383	0	0	41,383
30″	26,953	2,128	1,907	27,174
33″	2,409	0	0	2,409
36″	40,892	0	0	40,892
37½″	8,896	0	0	8,896
44″	22,974	0	0	22,974
48″	11,504	0	0	11,504
60″	9,981	16,235	0	26,216
Total W. I. and S.	865,629′	19,101′	5,445′	879,285′

Transite Pipe

6″	4,904′	0′	0′	4,904′
8″	7,999	0	0	7,999
Total Transite	12,903′	0′	0′	12,903′

Cast Iron Pipe

Size	Total Pipe in Ground July 1, 1948	Pipe Laid 1948-49	Removed or Abandoned 1948-49	Total Pipe in Ground June 30, 1949
2″	23,553′	607′	2,503′	21,657′
3″	62,055	0	1,380	60,675
4″	494,496	5,990	3,952	496,534
6″	1,697,893	13,286	514	1,710,665
8″	1,471,349	24,858	234	1,425,973
10″	6,348	0	0	6,348
12″	422,016	8,415	0	430,431
16″	255,321	20,395	0	275,716
20″	22,642	0	0	22,642
22″	19,058	0	0	19,058
24″	52,173	0	0	52,173
30″	6,108	0	0	6,108
Total C. I.	4,533,012′	73,551′	8,583′	4,597,980′
Total All	5,441,544′	92,652′	14,028′	5,490,168′
Miles	1,024.914	17.548	2.657	1,039.805

TABLE No. 7

VALVE RECORDS
CITY DISTRIBUTION SYSTEM

June 30, 1949

Gates		Service Gates		Blowoffs		Air Valves		Check Valves	
2″	108			¾″	9	¾″	37	1½″	7
3″	237	3″	409	1″	46	1″	36	2″	9
4″	1,165	4″	382	1½″	288	1½″	335	3″	1
6″	3,672	6″	246	2″	842	2″	231	4″	10
8″	3,433	8″	179	3″	203	3″	5	6″	26
10″	6			4″	267	4″	1	8″	29
12″	782	12″	8	6″	156	6″	13	12″	3
16″	414			8″	115	8″	242	16″	3
20″	23			12″	21				
22″	20			16″	2				
24″	57							Stop Cocks	
30″	21							⅝″	18
36″	20							¾″	140
37½″	2							1″	201
42″	3							1½″	987
48″	1							2″	2,747

TABLE No. 8
CONTRACT DATA 1948-49

Contract No.	Title of Contract	Division	No. of Bidders	Contractor	Date of Award	Date of Completion	% Completion 6/30/49	Bid Price	Contract Cost to 6/30/49
467R	Reconstruction of Calaveras Intake Screen at Adit No. 1	Alameda	1	Minton & Kuban	10/ 4/48	12/ 7/48	100	$14,247.00	$11,618.29
469R	Remodeling of Millbrae Pump Station	Peninsula	5	N. O. Wiseth	1/12/48	7/14/48	100	22,354.00	24,332.00
473AR	Erection of Elevated Tank or Stand-pipe in Potrero Heights District	City Dist.	3	Chi. Br. & Iron Co.	12/27/48		None	30,477.35	.....
477	Laying of 6" and 8" cast iron mains in Alemany Blvd. and Custer St.	City Dist.	3	E. J. Treacy	3/29/48	7/16/48	100	8,568.00	7,080.16
478	Construction of the 60" Sunset supply line, Baden to Colma	Peninsula	8	McGuire & Hester	4/12/48	4/30/49	100	319,895.00	282,640.66
479	For the laying of 6" and 8" cast iron mains in Army St. from Shotwell St. to So. Van Ness Ave.	City Dist.	2	Fred T. Fairey	5/17/48	11/18/48	100	5,363.30	4,948.41
480	For the laying of 12" and 16" cast iron mains in Steiner, Franklin and Green Streets	City Dist.	2	S. F. W. D.	7/12/48	5/31/49	100	86,721.50	88,428.52
482	For the laying of 6", 8", 12" and 16" cast iron mains in Lakeshore Park subdivision No. 3 and in Sloat Blvd.	City Dist.	4	E. J. Tobin	6/ 7/48	10/18/48	100	59,878.85	56,839.61
483	For the laying of 6" and 8" cast iron mains in Amherst, Princeton, University, Bacon & Wayland Sts.	City Dist.	3	E. J. Treacy	5/10/48	8/27/48	100	11,894.75	11,805.25
484	For the laying of 12" cast iron main in Phelan Ave. and Ridgewood St., Ocean and Flood Aves.	City Dist.	4	E. J. Treacy	8/23/48	12/23/48	100	29,088.50	30,752.74
485	Lake Merced crossing for 60" Sunset supply line	Peninsula	2	M and K Corp.	6/21/48	10/ 8/48	100	65,912.00	62,202.60
487	For the laying of 4" and 8" cast iron mains in Clementina, Shipley, Clara and Arkansas Sts.	City Dist.	3	S. F. W. D.	8/ 4/48	11/11/48	100	16.008.00	9,729.27
488	For the repaving of street and sidewalk openings—Fiscal year 1948-49	City Dist.	1	Pac. Pav. Co. Ltd.	6/21/48	6/30/49	100	72,675.00	68,685.12
489	For the laying of 6" and 8" cast iron mains in Fillmore St. from Hayes to Bush St.	City Dist.	3	S. F. W. D.	8/ 4/48	9/15/48	100	27,029.00	30,164.71
490	For the laying of 6" and 8" cast iron mains in Sloat Blvd. between 39th and 43rd Aves.	City Dist.	3	F. T. Fairey	8/ 9/48	10/27/48	100	5,601.20	5,643.17
491	For the laying of 16" cast iron mains in Oakdale Ave.; Quint and Newcomb Sts. from Selby to 3rd.	City Dist.	4	E. J. Tobin	2/ 7/49	4/19/49	100	40,904.00	39,556.82
492	For the laying of 8" cast iron main in Illinois St. from 23rd to 25th Sts.	City Dist.	2	F. T. Fairey	8/16/48	10/22/48	100	3,801.00	4,167.27

Contract No.	Title of Contract	Division	No. of Bidders	Contractor	Date of Award	Date of Completion	% Completion 6/30/49	Bid Price	Contract Cost to 6/30/49
493	For the gathering and delivering of the Walnut Crop on Sunol Walnut Orchard	Agriculture	2	J. Helzer	8/23/48	11/11/48	100	11,650.00	11,081.91
494	For the laying of 6" and 8" cast iron mains in Pacheco and Montana Sts.	City Dist.	2	F. T. Fairey	9/20/48	11/24/48	100	6,091.50	5,946.70
495	For the laying of 16" cast iron main in 3rd St. Thornton to Jamestown Aves.	City Dist.	2	E. J. Tobin	10/ 4/48	3/ 1/49	100	48,981.50	50,203.32
496	Installation of Surge tank at Irvington Pump Station	Alameda	4	C. Nor. Petersen	10/ 4/48	12/10/48	100	15,245.00	16,079.44
497	For the laying of 16" cast iron mains in 28th and 45th Aves.	City Dist.	2	F. T. Fairey	10/25/48	2/23/49	100	67,058.50	68,149.80
498R	For the laying of 6" and 8" cast iron mains in Apparel Heights	City Dist.	3	E. J. Treacy	12/20/48	5/ 6/49	100	8,770.50	8,589.75
499	For the laying of 4" cast iron main in Columbia Square, Erie and Trainor Sts.	City Dist.	1	E. J. Treacy	11/15/48	5/10/49	100	8,047.25	8,150.57
500	Crystal Springs Pumping Station South Extension	Peninsula	8	Petersen	11/22/48		97	81,174.55	78,740.00
501	For the laying of 6" and 8" cast iron mains in Duncan and Phelps Sts.	City Dist.	1	S. F. W. D.	12/20/48	4/27/49	100	5,863.20	5,288.74
502	For the laying of 4" and 8" cast iron mains in Gough St. extension between Market and Otis Sts.	City Dist.	1	S. F. W. D.	1/ 3/49	4/12/49	100	4,342.50	2,679.47
503	For the laying of 12" cast iron mains in Mason, Washington and Stockton Sts.	City Dist.	2	Martin Murphy	12/20/48	4/6/49	100	23,208.00	24,603.91
504R	Reconditioning of Portions of Alameda Pipe Line in San Mateo County	Peninsula	1	Amer. Pipe & Construction Co.	12/27/48	3/15/49	100	64,869.40	68,589.39
505	For the laying of 4" and 6" cast iron mains in Kronquist Court and 27th Sts.	City Dist.	2	S. F. W. D.	1/24/49	4/11/49	100	4,168.60	3,861.07
506	For the laying of 6" and 8" cast iron mains in Moscow St. and 12th Ave.	City Dist.	3	S. F. W. D.	2/16/49	6/27/49	100	7,663.30	5,587.63
507	For the laying of 6" and 8" cast iron mains in 34th Ave. and Quintara St.	City Dist.	5	E. J. Tobin	3/21/49	5/12/49	100	4,192.60	2,044.71
508	For the laying of 6" and 8" cast iron mains in Athens St. from Madison to Peru St.	City Dist.	3	E. J. Treacy	5/ 9/49		None	4,683.55	.....
509	For the laying of 8" cast iron mains and installing fire sprinkler service in Quintara and Jones St.	City Dist.	3	F. T. Fairey	5/23/49		43	5,841.30	2,510.00
510	For the laying of 6" and 8" cast iron mains in South Hill Blvd., Roth St. and Chicago Way	City Dist.	4	F. T. Fairey	5/23/49		6.8	16,800.75	1,140.00
512	For the laying of 8" and 12" cast iron mains in 19th Ave. and Winston Drive	City Dist.	3	F. T. Fairey	5/23/49	6/24/49	100	4,460.65	4,370.05
521	10" service for Royal Container Company, Millbrae.	Peninsula	3	E. T. Haas Co.	6/27/49		None	8,625.00	.....

ORGANIZATION AND PERSONNEL

G. W. Pracy.....General Manager and Chief Engineer
(Successor to N. A. Eckart, January 1, 1949)

WATER PRODUCTION AND ENGINEERING

T. W. Espy.....Senior Engineer in Charge of Water Production
L. J. Archer.....Senior Engineer in Charge of Design
C. A. Lauenstein.....Senior Engineer—Special Construction
L. A. McAtee.....Senior Engineer—Construction
W. A. Yount.....Superintendent Alameda Division
W. R. Anderson.....Assistant Superintendent Alameda Division
G. J. Davis.....Superintendent Peninsula Division
S. M. Millard.....Assistant Superintendent Peninsula Division
G. E. Fanning.....Photographer

CITY DISTRIBUTION

O. G. Goldman.....Superintendent City Distribution
S. M. Tatarian.....Acting Assistant Superintendent City Distribution
A. G. Zecher.....General Foreman City Pipe System
John E. O'Marie.....General Foreman Services and Meters
A. C. Doidge.....Head Clerk
R. W. Tullis.....Superintendent of Machine Shop

WATER PURIFICATION

H. C. Medbery.....Engineer of Water Purification
E. W. Barbee.....Assistant Engineer—Water Purification
H. W. Tracy.....Assistant Engineer—Water Purification
H. L. Fruitman.....Senior Water Chemist

WATER SALES

Joseph Conway.....Manager, Water Sales Division
J. W. Cooper.....Assistant Manager Water Sales Division
James Hennessy.....Chief Clerk Collections
Kearce Fahy.....Chief Clerk Consumers' Accounts
E. R. Benninger.....Head Clerk Water Sales Division
C. C. Clark.....Consumers' Complaint Investigator
Francis Lennon.....Head Clerk Adjusting Division
J. E. Huntoon.....Head Clerk Consumers' Accounts
Chas. Hynes.....Head Clerk Service and Supply
J. P. Manning.....Head Clerk Closing Bills
J. A. Ragsdale.....Head Clerk Docks and Shipping
F. Ute.....Chief Water Service Inspector

LANDS AND AGRICULTURE

H. C. Melone.....Superintendent Agricultural Division
Frank Peters, Sr.....Assistant Superintendent Agricultural Division

ACCOUNTS

E. J. White.....Senior Accountant
Z. H. Taylor.....Accountant
H. M. Kinsey.....Cashier

RETIRED 1948-49

During the past fiscal year, the following employees were retired from service, and recognition is given to their faithful service in the organization:

Nelson A. Eckart—General Manager and Chief Engineer.....18⅝ years' service
Charles C. Young—Chief Water Service Inspector.....40⅙ years' service
Patrick McLaughlin—Main Pipe Foreman.....40 years' service
Fred W. Horitz—Bookkeeping Machine Operator.....22¼ years' service
Dora B. Bennett—General Clerk-Stenographer.....23½ years' service
William Fick—Laborer.....23 years' service
James A. Spillane—Office Assistant.....6½ years' service

IN MEMORIAM

Name	Died	Length of Service
Harold Von Husen	February 1, 1949	26 years' service

CRANES LET HUGE PIPE SECTIONS DOWN WITH DELICATE PRECISION

HETCH HETCHY WATER SUPPLY, POWER AND UTILITIES ENGINEERING BUREAU

A. O. OLSON

Manager and Chief Engineer

A. O. OLSON
Manager and Chief Engineer

The war-born scarcity of competent engineers and engineering technicians still hampered the operations of the Hetch Hetchy Water Supply, Power and Utilities Engineering Bureau during the fiscal year, but this problem is gradually being overcome and should be licked in a few months. More expert help is becoming available, thereby eliminating the need for so much overtime and doubling up by the staff which has been necessary to get things done.

This bureau has full charge of the Hetch Hetchy Water Supply and Electric Power System, being responsible for the administration, engineering, construction work and operation of the system. In addition, the bureau also furnishes engineering service to the Municipal Railway and the Airport Department, planning and supervising all new construction for both of these utilities, as well as engineering in connection with maintenance and reconstruction of existing facilities.

To pluck any particular project out of a multitude of completely necessary activities and label it as "most important" is probably a distortion of the overall picture, but it should be mentioned that one of the most pressing and vital projects of the past fiscal year was the work done on the Cherry Valley Dam proposal.

The recent placing of a $4,000,000 bond issue on the November 8 ballot for construction of the Cherry Valley Dam culminated work in this bureau which has been going on the past nine years. This project has been particularly active in the 1948-49 fiscal year during which final contracts between the three parties involved in the project were debated, changed, changed again and finally approved by all parties. The three parties involved are the City and County of San Francisco, the Turlock and Modesto Irrigation Districts and the Federal Government acting through the Army Corps of Engineers.

Briefly, these contracts provide that the Army Corps of Engineers will buy flood control on the Tuolumne River from the City and the Irrigation districts by paying these two parties to erect a dam at Cherry Valley. The Army is to pay the City $4,400,000 and the Districts $4,600,000, or a total of $9,000,000 for

STRAIGHT AS A STRING

Reinforced concrete pipe is being fitted into place on the new San Joaquin Valley pipeline.

the flood control. The Districts would turn their $4,600,000 grant over to the City and the City would then seek the $4,000,000 bond issue in order to undertake the $13,000,000 Cherry Valley Dam project. The City would design, build and operate the dam. All the contracts are contingent upon the approval by the San Francisco electorate in November of the $4,000,000 bond issue, as well as appropriation by Congress of the Federal Grant.

In return for the use by the City now of the District's $4,600,000 grant from the Army Engineers, the City agrees to contribute to cost of the enlargement of the District's Don Pedro Dam in the future—at least twenty-five years distant—when the Districts and the City will need additional water storage. This is definitely advantageous to the City, as it would make future water storage possible at about one-fourth the cost it would take to build in many City-owned reservoirs at locations much higher in the mountains than is the Don Pedro Reservoir.

This commitment is also contingent upon the citizens' approval of a bond issue in the future when the additional water storage is needed.

The Cherry Valley Project, which would cost the City $4,000,000, would be completely paid for out of revenues from the water and power sales. No tax monies would be required.

Other activities of the bureau are described below:

HETCH HETCHY WATER SUPPLY

Operation of the water supply division of the Hetch Hetchy system, during the fiscal year 1948-1949, was on an approximately normal basis. The water supply condition was much improved over that of the previous year by heavier precipitation, which, however, was still below the seasonal normal. It was again necessary for the Hetch Hetchy system to furnish water to the Water Department to the limit of capacity throughout the year. The power plant operating schedule was somewhat curtailed for several months in the spring of 1949 to permit reconstruction work on two generating units (one at a time), continuing work having begun two years earlier with the other two units.

Labor and material for construction work were available in greater supply, and conditions for contract work were therefore much better than in previous years. Anticipating high bids on some relatively small contracts for work in remote locations, the bureau filed bids on several of its own contracts, and was awarded them, at prices substantially under the contractors' figures.

Water Delivery:

Throughout the fiscal year the full capacity of San Joaquin Pipe Line No. 1 was used constantly for delivery of water to the San Francisco Water Department. The total quantity delivered was 22,323 million gallons, an average of 61.2 million gallons daily. The rate of supply from Hetch Hetchy to the City cannot be further increased until San Joaquin Pipe Line No. 2 is ready for service. Completion of the first section of the new line is timed for the Spring of 1950. The quantity of water delivered through the Hetch Hetchy Aqueduct from October 18, 1934, when delivery from Hetch Hetchy was begun, to June 30, 1949, was 192,374 million gallons.

San Joaquin Pipe Line No. 2:

Plans and specifications for two sections of San Joaquin Pipe Line No. 2 were completed in July, 1948, and in the following month bids were received and contracts awarded. The contract for Section B covers the construction of 21.5 miles of 61-inch inside diameter pipe, extending easterly from the east levee of the San Joaquin River. This pipe is of steel plate with cement mortar lining and jacket. The contract for Section D covers 10.8 miles of 61-inch pipe extending westerly from the west side of the San Joaquin River to Tesla Portal of the Coast Range Tunnel, using reinforced concrete pipe having a steel plate cylinder as part of the reinforcement, the balance of the reinforcement being in the form of steel bars wound outside of the steel plate, the whole assembly of steel being embedded in a concrete jacket and lining. These two types of pipe were made alternate for the purpose of bidding; and for each section bids were received on both types, steel plate pipe proving less costly for Section B, and reinforced concrete lowest for Section D. It is expected that construction under these contracts will be completed about the end of September, 1949.

At the close of the year specifications and plans were nearly completed for the construction of Section C, one mile in length, crossing the river, to connect Sections B and D. Here, as in the sections just described, steel plate pipe and reinforced concrete pipe were alternate. The entire section will be constructed on pile foundations and will have a reinforced concrete jacket six inches in thickness for maximum protection.

Plans and specifications were nearly completed also for furnishing and installing valves and for other work appurtenant to the construction of the pipe line.

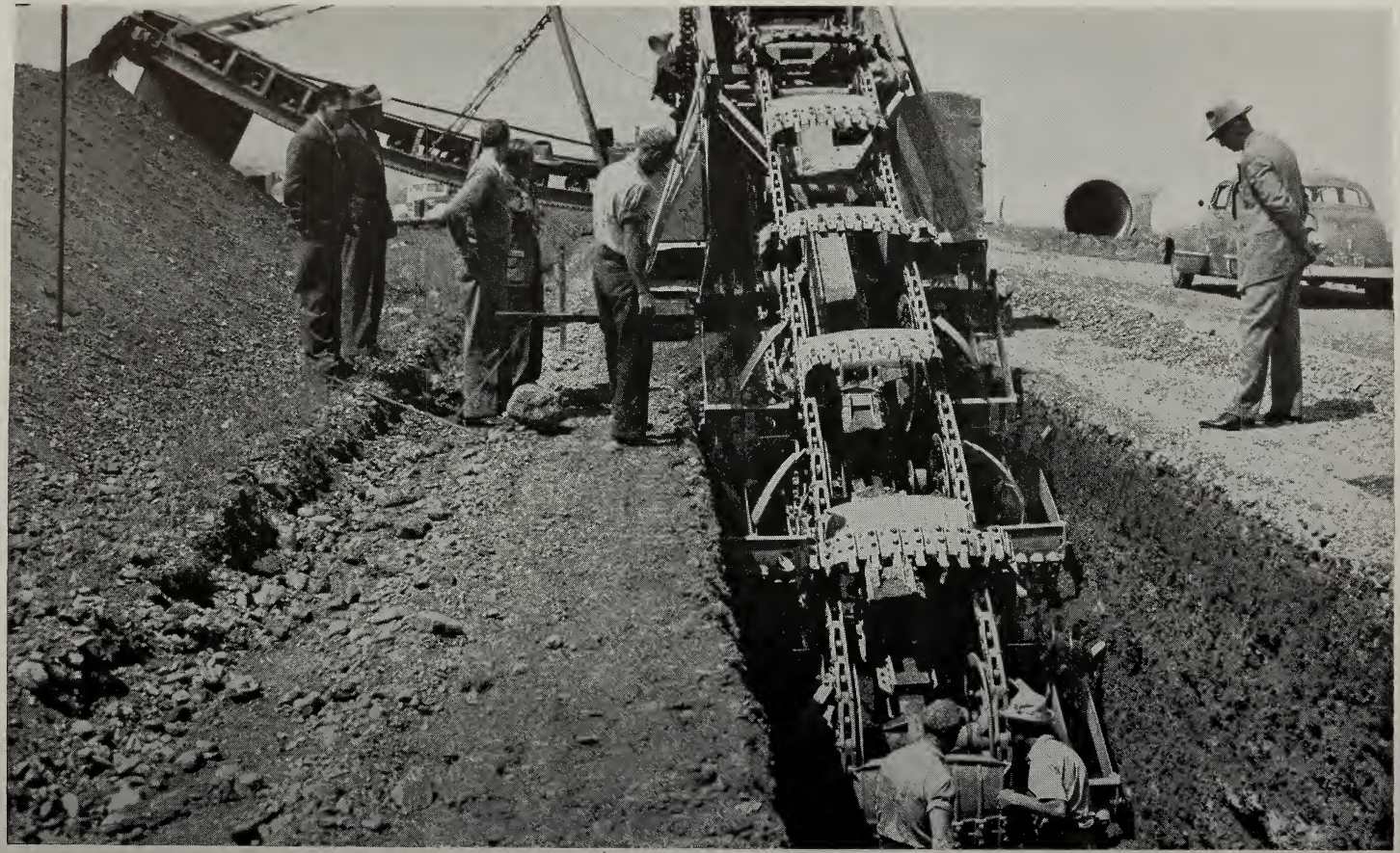
Section A, extending 14.2 miles from Oakdale Portal of the Foothill Tunnel to the east end of Section B, remains to be designed and specifications drawn up in the Spring of 1950. However, the other three sections will be connected to the existing works and put in service when completed, without awaiting the construction of the final section, thus increasing the capacity for delivery from Hetch Hetchy from 62 million gallons daily to 87 million gallons daily.

O'Shaughnessy Dam Spillway Gates:

A purchase contract for the furnishing of the movable steel gates for the spillway of O'Shaughnessy Dam was entered into prior to this fiscal year, and fabrication of the gates has been completed. Bids have been received for the installation of these gates and a contract will be awarded early in July, 1949. The work under the contract is to be completed in time to permit the use of the gates in the flood season of 1950. By adding ten feet to the maximum depth of storage behind O'Shaughnessy Dam, these gates will increase the reservoir capacity by 20,000 acre feet.

Hetch Hetchy Railroad Removal:

The Hetch Hetchy Railroad, having served its purpose in the transportation of materials for the heavy construction of the water supply and power system, has been in use for the last 10 years only for very light traffic, chiefly in the winter time, in connection with the operation and maintenance of the water supply and power system. For such use it was not necessary nor economical to spend much money on track maintenance, and during the last two or three years



SIXTY-ONE-INCH MORTAR LINED STEEL PIPE PREPARED FOR PLACEMENT

UNDERPASS
San Joaquin Pipeline No. 2 will pass under mainline railway tracks.

it was found that the cost of maintenance was too high to justify continued operation. Accordingly, in 1948, it was decided that the railroad should be abandoned, and the track material and equipment sold; and that future access to the points formerly served by the railroad should be provided by resurfacing the railroad grade so as to permit truck hauling on the grade in connection with the existing automobile roads.

Specifications were prepared for the removal of the material and equipment, and bids for the purchase of this material were solicited by the Purchaser of Supplies at the request of the Public Utilities Commission on an "as is, where is" basis. The highest bid received, $45,683.16, was considered grossly inadequate, and all bids were rejected. Direct negotiations for the sale of the material were then begun, and considerable interest developed among the dealers in such material, so that it appears that the sale finally will be consummated at a much higher figure than the highest formal bid.

Miscellaneous Improvements:

On the lower Cherry Aqueduct, the sluiceway and the canal improvements mentioned in last year's report were completed. Development of the maintenance yard at Oakdale for purposes of both the aqueduct and transmission line was continued by the addition of a combined office building and garage. A contract was awarded to the Hetch Hetchy Water Supply for the removal of closures in

DRAGLINE AT WORK
Trench is dug in which San Joaquin Pipeline No. 2 will lie.

three shafts of the Coast Range Tunnel; these closures were placed near the beginning of the World War as protection against sabotage, and the emergency being over it is desirable that these be removed. However, no work could be done on this contract because of the necessity of keeping the aqueduct in service continuously. Another contract was awarded to the Hetch Hetchy Water Supply for the construction of a road to the summit of Moccasin Peak to serve for access to the new radio station to be located on the peak.

Hydrography:

The precipitation and stream flow of the season 1948-49 were below normal. The Tuolumne River runoff as measured in terms of computed natural flow at La Grange was 1,303,792 acre-feet during this fiscal year, compared with 1,332,648 acre-feet last year. Despite the low flow during the year, both the Hetch Hetchy and Lake Eleanor reservoirs filled, owing to March and May storms. Draft from storage began at Hetch Hetchy on July 13, 1948, and Lake Eleanor on July 19, 1948. The spill point was reached at Hetch Hetchy Reservoir on June 11, 1949. The water in storage on July 1, 1949, in comparison with 1948 is shown below:

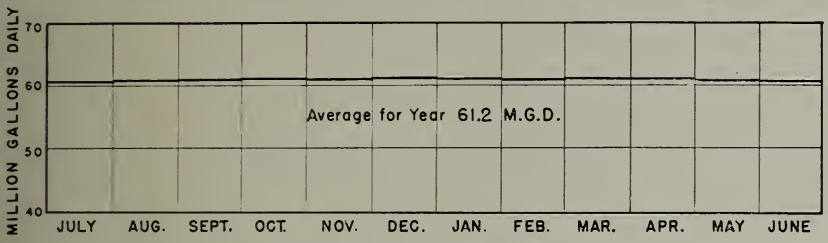
Reservoir	Acre feet, July 1 1949	1948
Hetch Hetchy	342,770	347,040
Lake Eleanor	26,726	26,146
Priest Forebay	797	621
	370,293	373,807

JOB WELL DONE
Hetch Hetchy water emerging from Moccasin Powerhouse has just turned generators creating electric energy.

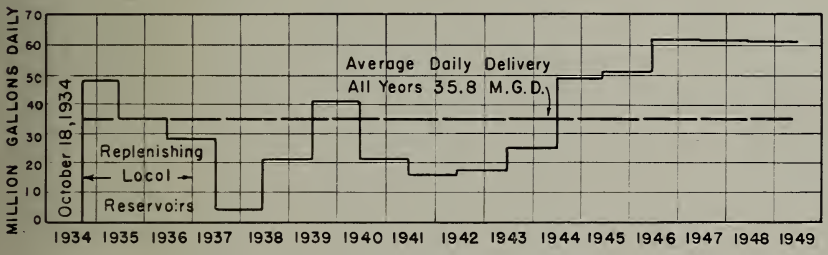
A forecast of the runoff from the system watersheds during the season of low precipitation from April 1 to July 31, is essential to an intelligent planning of a conservation and flood control program. Information for such a forecast is secured by snow surveys directed by the State Department of Public Works, Division of Water Resources, and performed cooperatively by the Hetch Hetchy organization, state, governmental, and other interested agencies. The state publishes the snow data collected in four bulletins, issued once a month from January to April, and includes a forecast of runoff for the period April 1 to July 31 in each of the last two issues. These forecasts give several months' advance warning of an impending runoff deficiency which permits the City and irrigation districts using the Tuolumne River flow appropriately to schedule the use of water in their common interest. The annual forecasts will prove even more valuable at the conclusion of the present continuing joint efforts of the United States War Department, the State, City, and Irrigation Districts toward a more comprehensive flood control system for the coordinated regulation of the Tuolumne River stream flow for purposes of domestic water supply, irrigation and power generation.

It appeared from the final report of the California Cooperative Snow Survey that with water used conservatively it will be sufficient to meet the City's needs, with the runoff at about 66 per cent of normal.

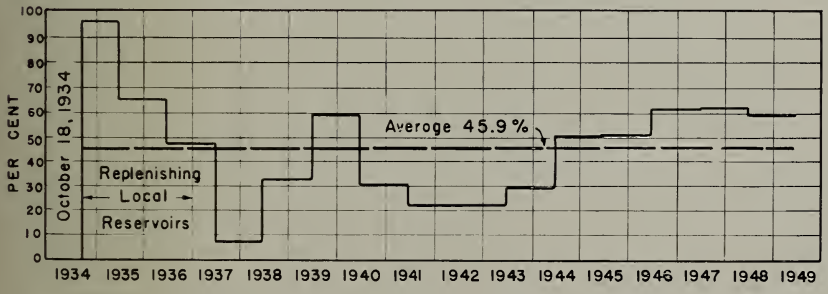
DELIVERY OF HETCH HETCHY WATER TO SAN FRANCISCO WATER DEPARTMENT



AVERAGE DAILY DELIVERY BY MONTHS
FOR FISCAL YEAR 1948-1949



AVERAGE DAILY DELIVERY BY FISCAL YEARS
FROM BEGINNING OF SERVICE OF HETCH HETCHY AQUEDUCT



RATIO OF WATER FURNISHED BY HETCH HETCHY SYSTEM
TO TOTAL CONSUMPTION OF WATER DEPARTMENT SYSTEM
BY FISCAL YEARS PERCENTAGE

The following table shows the predicted and actual quantities of runoff from the Tuolumne River watershed for the year 1948, and the predicted amount for 1949:

Point of Measurement	Run-off in Acre Feet—April 1 to July 31 1948 Predicted	1948 Measured	1949 Predicted
Hetch Hetchy	460,000	581,691	540,000
La Grange	950,000	1,177,449	1,100,000

The following tables show the measured precipitation and the natural stream flow of the Tuolumne River, Eleanor Creek, and Cherry River by months during the fiscal year:

PRECIPITATION, INCHES

Month	Hetch Hetchy 1948-49 Season	Hetch Hetchy 1910-49 Average	Lake Eleanor 1948-49 Season	Lake Eleanor 1910-49 Average	Moccasin 1948-49 Season	Moccasin 1925-49 Average
July	0.00	0.15	0.00	0.10	0.00	0.01
August	0.00	0.10	0.00	0.18	0.00	0.01
September	0.04	0.61	0.07	0.60	0.00	0.15
October	1.07	2.14	1.17	2.24	0.59	1.52
November	1.02	3.00	1.26	3.68	0.68	2.39
December	5.75	4.93	6.88	6.42	5.95	4.26
January	3.26	5.62	4.81	7.62	2.76	4.28
February	4.79	5.88	7.34	7.96	3.85	5.34
March	6.61	5.09	8.09	6.13	7.61	4.48
April	0.28	3.09	0.92	3.57	0.00	2.48
May	3.00	1.90	2.07	1.88	0.77	0.78
June	0.02	0.73	0.06	0.73	0.05	0.23
Total	25.84	33.24	32.67	41.11	22.26	25.93

NATURAL FLOW OF TUOLUMNE RIVER, ELEANOR CREEK AND CHERRY RIVER IN ACRE-FEET

Fiscal Year 1948-1949

Month	Tuolumne River at Hetch Hetchy	Eleanor Creek at Lake Eleanor	Cherry River at Cherry Valley	Tuolumne River at La Grange
July	55,424	4,598	10,284	87,725
August	5,988	641	367	5,173
September	2,087	468	305	2,475
October	2,176	91	847	5,147
November	3,312	184	1,882	8,211
December	5,328	1,628	2,743	17,768
January	6,339	2,487	2,771	19,900
February	9,967	3,166	4,873	39,118
March	20,700	8,110	7,150	123,239
April	119,135	41,266	62,218	318,246
May	217,738	42,212	84,621	436,421
June	153,935	14,684	43,900	240,369
Total	602,129	119,535	221,961	1,303,792

Diversions by San Francisco:

There were 22,323,300,000 gallons of water diverted by the City from the Tuolumne River watershed during the fiscal year 1948-49, making a grand total of 193,275,600,000 gallons diverted since the Hetch Hetchy Aqueduct began operation. The diversion by months is shown by the following table:

WATER DIVERTED BY THE CITY FROM TUOLUMNE RIVER WATERSHED

Fiscal Year 1948-1949

1948	Million Gallons	1949	Million Gallons
July	1,885.2	January	1,899.6
August	1,895.6	February	1,710.9
September	1,836.9	March	1,899.7
October	1,902.5	April	1,838.4
November	1,840.1	May	1,888.4
December	1,904.4	June	1,821.6

Total, fiscal year 1948-49	22,323.3
Diverted prior to July, 1948	170,952.3
Total diversion since beginning of Hetch Hetchy Aqueduct	193,275.6

Delivery to San Francisco:

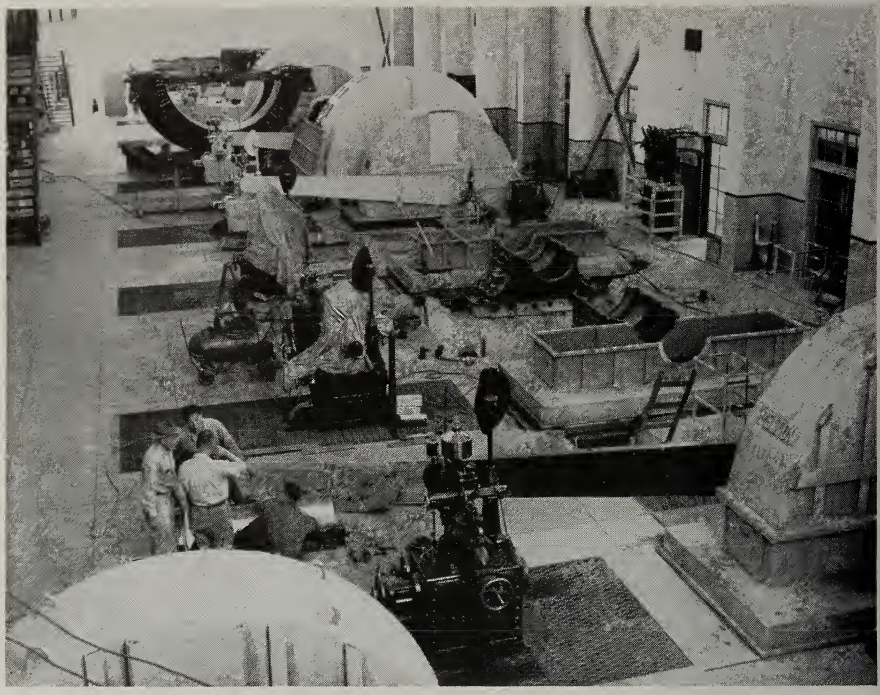
The quantity of Hetch Hetchy water brought to the San Francisco Water Department's system during the fiscal year was 22,323,300,000 gallons, making a total of 192,374,000,000 gallons since October 18, 1934, the date on which the water began to flow through the Hetch Hetchy Aqueduct to San Francisco. The average rate of delivery during the year was 61,200,000 gallons per day.

HETCH HETCHY AQUEDUCT

SAN JOAQUIN PIPE LINE NO. 1

Water Delivered to San Francisco Water Department

	Total Flow M.G.	Avg. Daily M.G.D.
Monthly—Season 1948-49:		
July, 1948	1,885.2	60.8
August, 1948	1,895.6	61.1
September, 1948	1,836.9	61.2
October, 1948	1,902.5	61.4
November, 1948	1,840.1	61.3
December, 1948	1,904.4	61.4
January, 1949	1,899.6	61.3
February, 1949	1,710.9	61.1
March, 1949	1,899.7	61.3
April, 1949	1,838.4	61.3
May, 1949	1,888.4	60.9
June, 1949	1,821.6	60.7
Total	22,323.3	61.2



POWERHOUSE SCENE
Electric generator and its two water wheels have been removed from regular location for repair. Water pits are thus bared.

EXPOSED!
Outer shell of generator and water wheels have been removed.

MONSTER AT REST
Repairs are made on huge water wheel which provides power for electric generator.

FINISHING TOUCHES
Workman sprays new coils which have been installed in electric generator.

Seasons Since Beginning of Pipe Line Operation:	Total Flow M.G.	Avg. Daily M.G.D.
1934-35	12,380.2	48.5
1935-36	13,149.8	35.9
1936-37	10,338.9	28.3
1937-38	1,358.5	3.7
1938-39	7,512.2	20.6
1939-40	14,883.3	40.7
1940-41	7,515.7	20.6
1941-42	5,744.6	15.7
1942-43	6,276.1	17.2
1943-44	9,386.2	25.6
1944-45	17,761.1	48.7
1945-46	18,616.3	51.0
1946-47	22,594.4	61.9
1947-48	22,533.4	61.6
1948-49	22,323.3	61.2
Total	192,374.0	35.8

The stored water available to the San Francisco Water Department at the end of the 1948-49 fiscal year was 3.98 times its system requirements during the year. The quantity in storage at various points was:

Reservoirs	Storage Billion Gallons
Hetch Hetchy and Lake Eleanor	119.7
Calaveras, Peninsular and City Reservoirs	30.3
Total	150.0

HETCH HETCHY POWER

Moccasin Power House:

In the spring of 1947, two of the four generating units were overhauled. Due to the critical water power shortage occasioned by the prolonged drought during the early part of 1948, work on the two remaining units was deferred until this year. Unit No. 1 was out of service from January 31, to March 30, 1949, and Unit No. 2, from March 30, to June 2, 1949, during which time, in addition to the reconstruction work on the foundations, new nozzle needle tips and seat rings were installed, and the generator stator coils were replaced with new coils of Class B insulation and greater copper cross-section.

To insure against unnecessary power interruptions and to provide better equipment protection, a new impedance relay system was placed in operation January 16, 1949, on the two-circuit, 110-kv, Moccasin-Newark transmission line. The new system, replacing the old relays installed in 1925, is designed for coordination with a similar installation at Substation J, at which point the transmission system of the Modesto Irrigation District connects to the City's lines.

Communication for dispatching and operations between Moccasin Power House and the Don Pedro power house, Substation A, and Substation J of the Modesto Irrigation District, has been greatly facilitated by the installation of power line carrier equipment in cooperation with the District. This equipment utilizes the high voltage transmission lines for communication purposes, making use of public toll lines for dispatching unnecessary. The carrier equipment also provides instantaneous indication and a graphic record at the Moccasin control board, of

the power supplied by the City to the District at Substation J, approximately forty miles distant. The new communication system was placed in service, January 13, 1949.

The total power output of the generators of the plant is indicated by a totalizing wattmeter which provides a graphic record. During the year, the original meter with its appurtenant equipment, which had become obsolete and unreliable, was replaced by a Leeds & Northrup Micromax recorder.

The station control battery, used for circuit breaker control and emergency lighting, in service since 1925 when the power house began operation, was replaced by a similar type of the latest design.

Early Intake Power House:

Construction of a sluiceway in the Lower Cherry Diversion Dam and repairs to the Lower Cherry Aqueduct made it necessary to shut down the plant from September 14, to October 19, 1948. During this period, the oil circuit breakers and transformers of Units Nos. 1, 2 and 3 were inspected and cleaned and the breaker contacts were aligned. New thrust bearings were installed in all three units and a repaired runner and repaired wickets were installed in Unit No. 1.

Communication System:

Plans and specifications were completed for a mobile radio system for the Hetch Hetchy project. The initial installation will consist of four fixed stations located at Moccasin, Early Intake, O'Shaughnessy Dam and Lake Eleanor, and seventeen mobile units in engineers' and foremen's cars, transmission line and aqueduct maintenance trucks, and Sno-Cats. All of the radio equipment has been purchased and it is expected that the system will be in operation in the fall of 1949.

POWER OPERATING STATISTICS

Fiscal Year 1948-49

Plant Data:	Name Plate Capacity—KVA	Maximum Load—KW	Annual Load Factor—%
Moccasin Power House	80,000	82,000	70.4
Early Intake Power House	3,795	4,200	68.6
Combined	83,795	84,900*	71.4

Energy Generated and Purchased (KWH):		
Gross Generation:		
Moccasin Power House	505,248,000	
Early Intake Power House	25,263,000	530,511,000
Station Service:		
Moccasin Power House	715,500	
Early Intake Power House	69,500	785,000
Net Generation		529,726,000
Purchased from P. G. & E. Co.		2,653,313
Total Available		532,379,313

*Coincidental Demand.

Energy Distributed (KWH):	
Project Use	2,146,962
Sales:	
Municipal Accounts	173,401,484
Modesto Irrigation District	102,072,000
Permanente Metals Corp.	17,028,000
Permanente Cement Co.	117,743,850
Pacific Gas & Electric Co.	59,540,407
Miscellaneous Customers	399,264
Losses and Unaccounted for:	
Hetch Hetchy System	26,568,574
P. G. & E. System (for Municipal and Permanente Accounts)	33,478,772
Total Available	532,379,313

UTILITIES ENGINEERING BUREAU

Municipal Railway Engineering:

Such a huge operation as the Municipal Railway necessarily involves a substantial amount of engineering. At the end of this section is a complete list of all contracts supervised by the Engineering Bureau. No attempt will be made here in text form to describe the purpose of all these contracts. Some of the highlights, however, follow:

Equipment:

During the fiscal year 50 motor coaches were purchased and delivered at a total purchase price of $801,370.00. These brought the total motor coach fleet to 498.

During the same time 190 trolley coaches were delivered at a total purchase price of $3,738,347.30. These brought the total fleet of trolley coaches to 248. Plans and specifications for 100 additional trolley coaches to be purchased during 1949-1950 and 1950-1951 were prepared.

Vehicle Storage:

Potrero Car House and adjacent yard were converted for storage and servicing of trolley coaches with a capacity for 250 such vehicles.

Work was begun on the Presidio Avenue Yard and the utilization of the lower story of the Geary Car House, both of which areas will be used for storage and servicing of trolley coaches.

Conversions:

Fillmore (No. 22) Line was converted to trolley coach operation and the necessary overhead installed. The Mission Street Lines were converted to motor coach operation and plans were prepared for the removal of tracks and the installation of trolley coach overhead on these lines.

Trolley coach overhead was installed for the McAllister (No. 5), Haight (No. 7), Masonic (No. 6), Hayes (No. 21) and Market (No. 8) Lines. These conversions took place July 3, three days after the fiscal year concluded.

Track Reconstruction:

The inner tracks on Market Street were replaced west of Fremont Street. The outer tracks on Market Street were removed from Geary to Valencia.

Offices:

Plans were under preparation for the remodeling of the Geary Headquarters so as to provide additional office space for the general office departments, which currently are scattered over various buildings.

Rapid Transit:

Studies were made of the De Leuw, Bingham and Chew rapid transit plans. Information was also obtained on current plans for rapid transit in other cities of this country and abroad.

MUNICIPAL RAILWAY CONTRACTS ACTIVE DURING FISCAL YEAR 1948-1949

Muni. Contract No.		Contractor	Amt. Cont.	Awarded	Completed
298	Service Bldg.—Ocean Bus Yard	Monson Bros.	$482,000.00	9/21/48	3/18/49
300	Paving Mariposa St. Yard	Eaton & Smith	22,947.50	8/30/48	11/ 3/48
301	Grading and Paving Portion Elkton Yard	C. L. Harney	15,179.00	7/12/48	8/20/48
302	Const. Wire Fence—Kirkland Yard	Cyclone Fence	1,949.00	6/ 3/48	8/23/48
303	Const. Bus Pits Elkton Yard	C. L. Harney	7,220.00	7/12/48	8/ 6/48
304	Const. No. 22 Overhead Trolley	Severin Elec. Co.	151,486.00	5/24/48	8/18/49
305	Relocate Trolley Wires Geary Street	Municipal Railway	3,200.00		
306	Roof Repairs Mason Carhouse	Regal Roofing Co.	5,281.00	10/11/48	12/10/48
307	Overhead Install Mariposa Yard	Abbett Elec. Corp.	23,708.00	8/26/48	1/12/49
308	Remove tracks—Geary to Valencia	Eaton & Smith	289,872.50	3/14/49	7/ 4/49
309	Wreck McAllister Carhouse	Cleveland Wrecking	3,130.00	7/ 7/48	8/ 6/48
310	*Install Safety Doors—Cars	Municipal Railway	60,500.00	1/24/49	
311	Rearrange Tracks Church and Market	Municipal Railway	6,320.25†	8/18/48	9/29/48
312	*Grade, Pave, etc., Presidio Bus Yard	Piombo Const. Co.	169,522.45	3/21/49	
313	Const. Load Islands on Market Street	Eaton & Smith	53,460.00	10/18/48	12/23/48
314	*Alterations Geary Carhouse	Empire Const. Co.	269,800.00		
316	No. 5 and No. 21 Trolley Coach Line	Severin Elec. Co.	220,090.00	9/20/48	
317	No. 5 and No. 21 Trol. East of Franklin	Severin Elec. Co.	49,648.30		
318	Repair Fences R/W Church Line	Cal. Wire Cloth Cp.	1,550.00	1/ 4/48	10/21/48
319	No. 8 Trolley Overhead Line	Petersen Eng. Co.	140,910.00	12/13/48	7/ 1/49
320	Alterations Potrero Carhouse	Wm. Horstmeyer Co.	577,449.00	2/ 7/49	6/20/49
321	Fire Alarm System Ocean Bus Yard	Geo. F. Brayer	2,597.00	2/ 7/49	8/15/49
322	Turnback Loop for No. 22 Line	Severin Elec. Co.	12,684.00	11/22/48	2/ 8/49
324	Overhead Potrero Carhouse and Yard	Abbett Elec. Corp.	102,303.00	2/28/49	6/28/49
325	No. 6 Trolley Coach Line	Severin Elec. Co.	189,800.00	1/31/49	
326	Bus Washer and Lights Mariposa Yard	Wellnitz & DeNarde	22,089.00	1/31/49	4/28/49
329	Overhead for Presidio Yard	Severin Elec. Co.	67,289.00		
330	Reconst. Tracks Geary and Market	Chas. L. Harney	31,762.00	3/14/49	5/ 3/49
333	Loop for No. 21—8th and Clement	Petersen Eng. Co.	15,100.00	4/18/49	7/14/49
334	Grading and Pave—14th and Quintara	Chas. L. Harney	7,163.00	5/ 2/49	6/ 8/49
337	Install feeders Sta. I—Market to Valencia	Severin Elec. Co.	24,440.00	4/25/49	7/ 3/49
340	Install Overhead Con. 16th and Mariposa	Severin Elec. Co.	4,438.00	6/ 8/49	6/22/49

*Under construction.
†W.O.

Engineering for the following projects was begun but the contracts were not let during the fiscal year:

Elkton Shop Construction
Mission Street Trolley Coach Overhead
Geary Carhouse Substation area remodeling
Powell Street Turntable
Waiting Station on 14th Ave. at Quintara
West Portal Substation

AIRPORT ENGINEERING

The fiscal year 1948-1949 saw the most difficult and least spectacular part of the Airport's expansion program accomplished. Tremendous progress was made although a casual visitor to the Airport would wonder where all the money has gone. In truth, it has gone into the ground. By that it is meant that drainage, conduits, fill, and other work connected with the field area itself was done. Obviously, this has to be done before any of the above ground structures of the Airport can be erected. After all, it is the runway and taxiway pattern which actually serves the airplanes as they land or take off.

One of the most important projects was the building of a complete new runway to serve during the storm wind conditions at the airport. This was the first completely new runway built under the current expansion program. It replaced the older, inadequate, storm wind runway which was in the path of construction. Another major step forward was the opening of the main entrance road from the Bayshore Freeway, making it possible for a much simpler entrance route to the Airport than was in effect previously.

There were many other projects completed during the fiscal year and the table attached to this report lists the pertinent data concerning them. Briefly, they included a new parking area for private and itinerant aircraft, changing of field storm water drainage, erection of two new pumping plants, changing the discharge point for sewage and bringing a new and greatly increased water supply to the airport. These projects, of course, required a great deal of careful scheduling of construction operations in order that construction would least interfere with aircraft operations.

Construction work accomplished during this fiscal year financed from the 1945 Airport Bond Fund amounted to $3,053,605.35. The remainder of the work done amounting to $69,197.03 was financed with Airport Operating funds.

A Federal grant of $2,352,606.00 was accepted by the City to assist in financing an airport improvement project. Construction under this project (Contract No. 109) was about 72% completed at the close of the fiscal year. The list of money expended, however, does not include this Federal grant, as under existing procedure, the work is done before the Federal money is turned over to the grantee. This grant will be applied to future work, but was received upon the basis of work already done.

In conjunction with the mention of a new airport bond issue in another section of this report (see airport section) it might be stated that one of the major factors in the need for additional financing was that construction costs had increased by October, 1948, 60% over those in 1944, when the estimates for the 1945 Airport Bond Project were prepared.

LAND, TAX AND APPRAISAL DIVISION

The purpose of the Land, Tax and Appraisal Division is to combine within one group functions of the several utilities operations under the direction of the Hetch Hetchy Water Supply, Power and Engineering Bureau which are of like nature but are not a major function of the engineering bureaus from which they are lifted.

This grouping of functions is in conformity with practices of other large private and public utility organizations. It was merely a reshifting of personnel for greater efficiency.

The title of the new division is self-explanatory. In connection with land, the division does all the engineering work necessary to the acquisition of property, preparation of deeds, property descriptions, calculations and title clearances. For example, the past fiscal year, this type of work was done relative to land acquired for: San Francisco Airport; San Joaquin Pipeline No. 2, Delta-Mendota Canal Crossing; Moccasin Peak Radio Station; Cherry Valley Reservoir Development; Disposition of Hetch Hetchy Railroad, Acquisition and disposition of Municipal Railway properties.

As to taxes, the Public Utilities are subject to taxes of political bodies in many areas. Problems arise. In one instance, the City is suing San Mateo County on the grounds that assessment of airport property is unjust. Much preparation was necessary for this suit.

Appraisal work is a function required by the Charter which requires that each utility of the City be re-appraised every five years. This division does field engineering work to supplement the work done in this regard by the accountants of the Controller's Office. It is also necessary to do much appraisal work in the acquisition of property by the Railway.

There are, in addition, many other miscellaneous functions performed by this division that are too detailed to list in this report.

IMPROVEMENTS CONSTRUCTED AT SAN FRANCISCO AIRPORT

During Fiscal Year 1948-1949

Contract No.	Contract Title	Contractor	Contract Time Started	Contract Time Completed	Contract Price	Cost of Work Done During Fiscal Year
107	Constructing Post Office Building	Wellnitz & De Narde	4/26/48	8/31/48	$52,264.00	$6,572.00
108	Paving in Post Office Building Area	L. C. Smith Co.	4/29/48	7/29/48	15,100.75	1,072.47
109	Paving, Drainage, Water Supply, Sewerage, Electrical and related work	Morrison-Knudson Co., Inc.	10/ 4/48	12/27/49	3,994,844.45	2,884,061.64
110	Paving on Runway 10L-28R	Charles L. Harney, Inc.	8/ 9/48	8/12/48	19,427.00	19,304.03
111	Constructing Passenger Concourse	(All bids rejected; Plans Modified)	.....	.....	53,350.00*	.....
112	Automobile Parking Area	L. C. Smith Co.	10/11/48	12/30/48	5,913.65	5,943.06
113	Paving and Miscellaneous Repair Work in Seaplane Port Area	Clements & Co.	12/ 6/48	3/15/49	53,362.50	53,800.97
114	Constructing Passenger Concourse	Arthur W. Baum	12/18/48	5/27/49	45,645.00	50,803.00
115	Alterations to Electric Power Distribution System in Seaplane Port Area	Scott-Buttner Electric Co., Ltd.	2/ 7/49	5/17/49	9,976.50	10,176.40
116	Buildings, Pavement and Utilities Extensions near Administration Building	W. C. Tait Co.	5/16/49	.....	36,148.40	28,814.59
117	Fire House and Crew Chief's Building		.....	.....	100,000.00†	.....
118	Connecting Induction Regulators for Seaplane Port Area Power Service	George F. Brayer	5/ 5/49	5/27/49	893.00	893.00
W.O. 864-26	Furnishing Induction Regulators for Seaplane Port Area	Pacific Gas & Electric Co.	4/ 4/49	5/ 1/49	212.55	212.55
W.O. 1573	Construction 12 KV, 2,000 KVA Electric Sub-Station and Appurtenances for Airline Base Area	Pacific Gas & Electric Co.	6/ /49	7/22/49	16,000.00	10,000.00
P.O.-U-96430	Drainage Pumps (9 pumps)	Food Machinery & Chemical Corp., Peerless Pump Division	12/ 8/48	4/26/49	39,184.73	39,184.73
P.O.-U-98570	Repair and Reconstruct one 5,000 g.p.m. Drainage Pump	Byron Jackson Co.	3/22/49	.....	1,225.00	1,000.00
P.O.-U-98569	225 KVA Transformer for Administration Building	Electronic Specialty Co.	3/22/49	6/ /49	2,391.99	2,391.99
P.O.-U-98568	Furnishing Runway Lighting Power Control Equipment	Westinghouse Electric Corp.	3/22/49	.....	14,570.38	8,000.00
P.O.-U-99841	Portable Runway Lights	Bascomb Rush	6/15/49	7/ 1/49	571.95	571.95
P.O.	Constructing a Model of San Francisco Airport	(Contract awarded—but not Certified)	.....	.....	5,287.40*	.....
119	Furnishing and Installing High Intensity Runway Lights (for two runways)	(Contract prepared but not yet advertised for bids)	.....	.....	65,000.00†	.....
120	Paving Runways 1R-19L and 10L-28R, and other Paving, Grading, Drainage, Electrical, and Related Work	(Plans and Specifications about 70% completed)	.....	.....	2,820,000.00	.....
	Total Cost of Work Constructed during Fiscal Year 1948-1949					$3,122,802.38

*Lowest Bid Price †Preliminary Estimate of Cost.

HETCH HETCHY WATER SUPPLY AND POWER PROJECT
CONSOLIDATED BALANCE SHEET
June 30, 1949

ASSETS

	Water	Power	Total
FIXED CAPITAL			
In Service	$93,504,206.48	$12,797,812.85	$106,302,019.33
Under Construction	23,093.27	.....	23,093.27
Less Reserve for Depreciation	17,971,725.58	6,171,391.09	24,143,116.67
	$75,555,574.17	$6,626,421.76	$82,181,995.93
INVESTMENTS			
Amazon and Glen Park Reservoir Sites	411,625.00	.....	411,625.00
CASH			
Treasurer's Balances, Schedule Annexed	2,003,704.95	1,137,933.34	3,141,638.29
Revolving Funds	.....	4,000.00	4,000.00
In Transit for Service Charges	337.25	1,862.25	2,199.50
ACCOUNTS RECEIVABLE			
General Debtors	78.74	141,248.96	141,327.70
Bureau of Light, Heat and Power	.....	150,521.95	150,521.95
Recreation Department	.....	414.30	414.30
INTERFUND ACCOUNTS RECEIVABLE			
Schedule Annexed	161,845.14	.....	161,845.14
DEFERRED CHARGES			
Material and Supplies	2,326.42	31,104.69	33,431.11
Prepaid Taxes, Insurance, etc.	488.54	.....	488.54
Operating Advances, P.U.C.	3,315.15	3,315.15	6,630.30
Operating Advances, Engineering Bureau (Contra)	4,930.33	2,465.17	7,395.50
Commitments (Contra)	272,838.75	58,650.80	331,489.55
Preliminary Surveys and Investigation	235,179.24	.....	235,179.24
Work in Progress	373,464.54	166,769.00	540,233.54
SUSPENSE DEBITS	236.60	20,500.00	20,736.60
TOTAL ASSETS	$79,025,944.82	$8,345,207.37	$87,371,152.19

LIABILITIES

	Water	Power	Total
BONDED DEBT			
Hetch Hetchy Bond Issues, Schedule Annexed	$38,520,300.00	$5,054,700.00	$43,575,000.00
Matured, Not Presented for Payment	16,000.00	.....	16,000.00
BOND INTEREST PAYABLE			
Accrued Not Due, Schedule Annexed	$980,261.24	.....	$980,261.24
Matured, Not Presented for Payment, Schedule Annexed	56,930.00	.....	56,930.00
ACCOUNTS PAYABLE			
General Creditors	$368.55	$5,864.97	$6,233.52
Revolving Fund Reimbursement in Transit	38.50	.....	38.50
Warrants Outstanding, Schedule Annexed	227,798.32	.....	227,798.32
Payroll Deductions Payable	21,826.34	.....	21,826.34
Accrued Fee Due U. S. Government	15,000.00	.....	15,000.00
Commitments (Contra)	272,838.75	58,650.80	331,489.55
INTERFUND ACCOUNTS PAYABLE			
Schedule Annexed	114,193.04	9,300.05	123,493.09
DEFERRED CREDITS			
Stores Clearing Account	.....	43.31	43.31
Operating Advances, H.H.P.D. (Contra)	2,465.17	.....	2,465.17
Operating Advances—Municipal Railway	4,930.33	.....	4,930.33
Operating Advances—H.H.W.S. (Contra)	4,930.33	.....	4,930.33
Suspense Credits	232.00	.....	232.00
Employees' Provident Reserves:			
Reserve for Vacations	19,581.50	.....	19,581.50
Reserve for Sick Leave	1,545.62	.....	1,545.62
Reserve for Injuries and Damages	13,044.73	.....	13,044.73
SURPLUS, SCHEDULE ANNEXED	38,753,660.40	3,216,648.24	41,970,308.64
TOTAL LIABILITIES	$79,025,944.82	$8,345,207.37	$87,371,152.19

HETCH HETCHY WATER SUPPLY AND POWER PROJECT
CONSOLIDATED COMPARATIVE INCOME STATEMENT

June 30, 1949

UTILITY OPERATING INCOME	July 1, 1948 to June 30, 1949				July 1, 1947 to June 30, 1948			
Operating Revenue:	Water	Power	Eliminate Duplications	Consolidated	Water	Power	Eliminate Duplications	Consolidated
Sales of Electric Energy:								
Commercial and Industrial Sales	.....	$816,779.80	.....	$816,779.80	.....	$828,949.41	.....	$828,949.41
Public Street and Highway Lighting	.....	461,087.06	.....	461,087.06	.....	429,221.90	.....	429,221.90
Other Sales to Public Authorities	.....	732,800.52	.....	732,800.52	.....	611,504.72	.....	611,504.72
Sales to Other Electric Utilities	.....	579,683.18	.....	579,683.18	.....	487,740.08	.....	487,740.08
Sales to Railroads and Railways	.....	799,010.28	.....	799,010.28	.....	1,033,674.15	.....	1,033,674.15
Other Sales	.....	1,544.82	.....	1,544.82	.....	1,182.01	.....	1,182.01
Total Sales of Electric Energy	.....	$3,390,905.66	.....	$3,390,905.66	.....	$3,392,272.27	.....	$3,392,272.27
Other Electric Revenues	.....	22,961.65	.....	22,961.65	.....	21,696.66	.....	21,696.66
Water Sales:								
Sale of Water for Power, H.H.P.D.	$983,111.74	.....	$983,111.74	.....	$1,000,000.00	.....	$1,000,000.00	.....
Standby Charge and Sale of Water S.F.W.D.	3,780,804.29	.....	.....	3,780,804.29	3,533,700.00	.....	.....	3,533,700.00
Total Operating Revenues	$4,763,916.03	$3,413,867.31	$983,111.74	$7,194,671.60	$4,533,700.00	$3,413,968.93	$1,000,000.00	$6,947,668.93

Operating Revenue Deductions:								
Operating Expenses:								
Production Expense	$155,528.91	$199,116.51	.....	$354,645.42	$193,024.47	$202,270.90	.....	$395,295.37
Purchase of Water for Power	.....	983,111.74	$983,111.74	.....	.....	1,000,000.00	$1,000,000.00	.....
Purchased Power	.....	69,157.40	.....	69,157.40	.....	169,069.26	.....	169,069.26
Transmission Expense	51,978.58	123,025.14	.....	175,003.72	53,038.93	131,876.71	.....	184,915.64
Distribution Expense	.....	919,813.89	.....	919,813.89	.....	888,344.53	.....	888,344.53
Administrative and General Expense	128,946.90	64,815.17	.....	193,762.07	119,162.52	66,359.11	.....	185,521.63
Total Operating Expenses	$336,454.39	$2,359,039.85	$983,111.74	$1,712,382.50	$365,225.92	$2,457,920.51	$1,000,000.00	$1,823,146.43
Depreciation Expense	1,276,195.32	233,709.39	.....	1,509,904.71	1,281,167.17	233,812.30	.....	1,514,979.47
Taxes (Actually Paid)	19,048.51	.....	.....	19,048.51	16,463.26	.....	.....	16,463.26
Fee to U. S. Government (Raker Act)	30,000.00	.....	.....	30,000.00	30,000.00	.....	.....	30,000.00
Total Operating Revenue Deductions	$1,661,698.22	$2,592,749.24	$983,111.74	$3,271,335.72	$1,692,856.35	$2,691,732.81	$1,000,000.00	$3,384,589.16
Net Operating Revenues	$3,102,217.81	$821,118.07	.....	$3,923,335.88	$2,840,843.65	$722,236.12	.....	$3,563,079.77
OTHER INCOME								
Miscellaneous Non-Operating Revenue	474.03	.....	.....	474.03	1,136.69	.....	.....	1,136.69
Gross Income	$3,102,691.84	$821,118.07	.....	$3,923,809.91	$2,841,980.34	$722,236.12	.....	$3,564,216.46
Interest on Long Term Debt	1,793,938.95	235,403.76	.....	2,029,342.71	1,884,387.63	247,272.58	.....	2,131,660.21
Balance Transferred to Earned Surplus	$1,308,752.89	$585,714.31	.....	$1,894,467.20	$957,592.71	$474,963.54	.....	$1,432,556.25

HETCH HETCHY WATER SUPPLY AND POWER PROJECT

CONSOLIDATED SURPLUS ACCOUNT

For the Twelve Months Ended June 30, 1949

	Water	Power	Eliminate Duplications	Consolidated
Surplus, June 30, 1948	$37,915,442.47	$2,950,726.06	.....	$40,866,168.53
Additions to Surplus:				
Contributions from Hetch Hetchy Power Division for Bldg. and Strs., Imps. and R. R.	46,563.34	.....	$46,563.34	.....
Contributions from San Francisco Water Department for Operating Expenses	121,000.00	.....	.....	121,000.00
Miscellaneous Additions to Surplus	382.30	7,529.06	.....	7,911.36
Miscellaneous Contributions to Surplus	3,781.64	.....	.....	3,781.64
Excess Book value over property sold or condemned	30,031.23	.....	.....	30,031.23
Net Profit for Year Ending June 30, 1949	1,308,752.89	585,714.31	.....	1,894,467.20
Deductions from Surplus:				
Contributions to Hetch Hetchy Water Supply for Improvements, etc.	.....	46,563.34	46,563.34	.....
Contributions to 1947 Hetch Hetchy Bond	506,055.74	280,000.00	.....	786,055.74
Contributions from San Francisco Water Department for Apr. Expense	159,444.76	.....	.....	159,444.76
Miscellaneous Deductions from Surplus	6,792.97	757.85	.....	7,550.82
Surplus, June 30, 1949	$38,753,660.40	$3,216,648.24	.....	$41,970,308.64
Composition of Surplus Cumulative to June 30, 1949				
Additions to Surplus:				
Contributions from San Francisco Water Department for Bond Interest and Redemption	$2,335,819.00	.....	.....	$2,335,819.00
Grants Earned on Federal Work Projects—H. H. Dam and Moccasin Diversion Works	1,211,450.00	.....	.....	1,211,450.00
Bond Premium 1933 Hetch Hetchy Dam Bonds	137,438.55	.....	.....	137,438.55
Bond Premium 1910-1932 Hetch Hetchy Bond Funds	1,240,169.26	.....	.....	1,240,169.26
Interest Received from Other Funds	77,801.23	.....	.....	77,801.23
Contributions from S. F. W. D. for Reconstruction and Replacements	149,691.84	$1,228.59	.....	150,920.43
Contributions from S. F. W. D. for Operating Expenses	1,944,693.50	.....	.....	1,944,693.50
Contributions through Fund from S. F. W. D. for Bond Interest and Redemption	6,278,591.14	.....	.....	6,278,591.14
Contributions from H. H. P. D. for Reconstruction and Replacements and Equipment	408,524.79	.....	$408,524.79	.....
Contributions from H. H. P. D. for Bond Interest and Redemption and Reconstruction	23,284,425.46	.....	23,284,425.46	.....
Contributions from General Fund for Bond Interest and Redemption	37,286,317.76	.....	.....	37,286,317.76
Miscellaneous Additions to Surplus	60,093.69	71,820.67	.....	131,914.36
Miscellaneous Contributions	6,176.71	.....	.....	6,176.71
Excess of Book Value over Property Sold or Condemned	32,380.56	.....	.....	32,380.56
Contributions from 1932 Hetch Hetchy Bond Fund	.....	114,770.08	114,770.08	.....
Net Earnings from Power Operations, August 16, 1925 to June 30, 1949	.....	27,401,937.36	.....	27,401,937.36
Deductions from Surplus:				
Miscellaneous Deductions from Surplus	28,569.29	8,151.78	.....	36,721.07
Contributions from 1932 H. H. Bond Fund to H. H. P. D. for Reconstruction & Replacement	114,770.08	.....	114,770.08	.....
Cost of Newark-San Lorenzo Pipe Line Transferred to S. F. W. D.	1,063,840.76	.....	.....	1,063,840.76
Retirement Corral Hollow Pipe Line	1,287,161.51	.....	.....	1,287,161.51
Bond Discount, 1910 Hetch Hetchy Bonds	737,956.39	.....	.....	737,956.39
Net Loss from Water Production, July 1, 1935 to June 30, 1949	31,913,341.65	.....	.....	31,913,341.65
Contribution to 1947 Hetch Hetchy Bond Fund	554,273.41	280,000.00	.....	834,273.41
California R. R. Commission Evaluation of P. G. & E. Co.'s San Francisco Properties	.....	392,006.43	.....	392,006.43
Contributions to H. H. W. S. for Reconstruction and Replacements	.....	408,524.79	408,524.79	.....
Contributions to H. H. W. S. for Bond Interest and Redemption	.....	23,284,425.46	23,284,425.46	.....
Surplus, June 30, 1949	$38,753,660.40	$3,216,648.24	.....	$41,970,308.64

PUBLIC UTILITIES COMMISSION
1947 HETCH HETCHY WATER BOND FUND
PROPRIETARY BALANCE SHEET—JUNE 30, 1949

ASSETS

FIXED CAPITAL IN SERVICE:			
1000 Transferred to San Francisco Water Dept.			$393,205.62
FIXED CAPITAL UNDER CONSTRUCTION:			
Expenditures for Account of Hetch Hetchy Water Supply:			
900 San Joaquin Pipe Line No. 2	$4,666,329.84		
905 Tesla Portal Chlorination Station	858.95		
Undistributed Construction Costs:			
1901 Interest During Construction	218,290.95	$4,885,479.74	
Expenditures for Account of San Francisco Water Dept.:			
950 Bay Division Pipe Line No. 3	$256,436.06		
960 Booster Pump—Crystal Springs Reservoir	120,333.87		
Undistributed Construction Costs:			
1901 Interest During Construction	20,759.62	$397,529.55	5,283,009.29
CASH—TREASURER:			
2000 1947 Hetch Hetchy Water Bond Fund			5,665,491.75
INTERFUND ACCOUNTS RECEIVABLE:			
3296 1945 Airport Bond Fund			39,184.74
DEFERRED CHARGES:			
3612 Outstanding Encumbrances (Contra)			2,988,136.77
Total Assets			$14,369,028.17

LIABILITIES

BONDED DEBT:		
4000 Bonds Outstanding—Unmatured		$10,325,000.00
ACCOUNTS PAYABLE:		
4500 Warrants Outstanding	$462.50	
4510 General Creditors	64,105.30	
4512 Outstanding Encumbrances (Contra)	2,988,136.77	3,052,704.57
INTRA FUND ACCOUNTS PAYABLE:		
5068 Hetch Hetchy Project Operating Fund		7,420.52
INTER FUND ACCOUNTS PAYABLE:		
5066 San Francisco Water Department		66,849.90
DEFERRED CREDITS:		
5497 Bond Premium Unamortized		12,304.18

SURPLUS

SURPLUS:		
5666-1 Contributions from San Francisco Water Department—Bond Redemption	$40,800.00	
5666-2 Contributions from San Francisco Water Department—Interest During Construction	29,675.59	
5668-1 Contributions from Hetch Hetchy Project Operating Fund—Bond Redemption	334,200.00	
5668-2 Contributions from Hetch Hetchy Project Operating Fund—Interest During Construction	220,073.41	
5668-5 Contributions from Hetch Hetchy Project Operating Fund—Construction Purposes	280,000.00	904,749.00
Total Liabilities and Surplus		$14,369,028.17

HETCH HETCHY WATER SUPPLY AND POWER PROJECT
STATEMENT OF
ANNUAL BOND INTEREST BY FISCAL YEARS (CASH BASIS)

Interest Maturity Dates / Rate of Interest	July 1 January 1	July 1 January 1	July 1 January 1	July 1 January 1	December 1 June 1	December 1 June 1	August 1 September 1 February 1 March 1	
	Issue of							
	1909	1910	1925	1928	1932	1933	1947	Total
1¼%	.....	.....	.....	.....	.....	.....	$2,300,000.00	$2,300,000.00
1½%	.....	.....	.....	.....	.....	.....	800,000.00	800,000.00
1¾%	.....	.....	.....	.....	.....	.....	1,500,000.00	1,500,000.00
2%	.....	.....	.....	.....	.....	.....	1,500,000.00	1,500,000.00
2½%	.....	.....	.....	.....	.....	.....	3,750,000.00	3,750,000.00
2¾%	.....	.....	.....	.....	$324,000.00	.....	.....	324,000.00
3%	.....	.....	.....	.....	194,000.00	.....	.....	194,000.00
4%	.....	.....	.....	.....	280,000.00	$3,500,000.00	.....	3,780,000.00
4½%	$600,000.00	$45,000,000.00	.....	$24,000,000.00	143,000.00	.....	750,000.00	70,493,000.00
5%	.....	.....	$10,000,000.00	.....	1,234,000.00	.....	100,000.00	11,334,000.00
5¾%	.....	.....	.....	.....	4,325,000.00	.....	.....	4,325,000.00
Total Issues	$600,000.00	$45,000,000.00	$10,000,000.00	$24,000,000.00	$6,500,000.00	$3,500,000.00	$10,700,000.00	$100,300,000.00
Bond Interest Expense as of June 30, 1948	$72,900.00	$37,952,194.97	$8,399,277.69	$17,259,055.96	$4,853,685.07	$1,145,647.23	.....	$69,682,760.92

Interest Fiscal Year								
1948-49	.....	720,000.00	256,250.00	796,500.00	233,077.50	38,500.00	$167,426.08	2,211,753.58
1949-50	.....	675,000.00	243,750.00	769,500.00	222,260.00	31,500.00	207,968.75	2,149,978.75
1950-51	.....	630,000.00	231,250.00	742,500.00	211,442.50	24,500.00	188,250.00	2,027,942.50
1951-52	.....	585,000.00	218,750.00	715,500.00	200,625.00	17,500.00	177,625.00	1,915,000.00
1952-53	.....	540,000.00	206,250.00	688,500.00	189,872.50	10,500.00	165,250.00	1,800,372.50
1953-54	.....	495,000.00	193,750.00	661,500.00	179,120.00	3,500.00	151,437.50	1,684,307.50
1954-55	.....	450,000.00	181,250.00	634,500.00	168,367.50	.....	140,625.00	1,574,742.50
1955-56	.....	405,000.00	168,750.00	607,500.00	157,615.00	.....	125,625.00	1,464,490.00
1956-57	.....	360,000.00	156,250.00	580,500.00	146,862.50	.....	108,750.00	1,352,362.50
1957-58	.....	315,000.00	143,750.00	553,500.00	136,110.00	.....	101,250.00	1,249,610.00
1958-59	.....	270,000.00	131,250.00	526,500.00	125,360.00	.....	93,750.00	1,146,860.00
1959-60	.....	225,000.00	118,750.00	499,500.00	114,610.00	.....	84,375.00	1,042,235.00
1960-61	.....	180,000.00	106,250.00	472,500.00	103,860.00	.....	75,000.00	937,610.00
1961-62	.....	135,000.00	93,750.00	445,500.00	93,110.00	.....	65,625.00	832,985.00
1962-63	.....	90,000.00	81,250.00	418,500.00	82,360.00	.....	56,250.00	728,360.00
1963-64	.....	45,000.00	68,750.00	391,500.00	71,610.00	.....	46,875.00	623,735.00
1964-65	.....	.....	56,250.00	364,500.00	61,377.50	.....	37,500.00	519,627.50
1965-66	.....	.....	43,750.00	337,500.00	51,895.00	.....	28,125.00	461,270.00
1966-67	.....	.....	31,250.00	310,500.00	42,412.50	.....	18,750.00	402,912.50
1967-68	.....	.....	18,750.00	283,500.00	32,930.00	.....	9,375.00	344,555.00
1968-69	.....	.....	6,250.00	256,500.00	23,447.50	.....	.....	286,197.50
1969-70	.....	.....	.....	229,500.00	13,965.00	.....	.....	243,465.00
1970-71	.....	.....	.....	202,500.00	4,482.50	.....	.....	206,982.50
1971-72	.....	.....	.....	175,500.00	.....	.....	.....	175,500.00
1972-73	.....	.....	.....	148,500.00	.....	.....	.....	148,500.00
1973-74	.....	.....	.....	121,500.00	.....	.....	.....	121,500.00
1974-75	.....	.....	.....	94,500.00	.....	.....	.....	94,500.00
1975-76	.....	.....	.....	67,500.00	.....	.....	.....	67,500.00
1976-77	.....	.....	.....	40,500.00	.....	.....	.....	40,500.00
1977-78	.....	.....	.....	13,500.00	.....	.....	.....	13,500.00
Totals	.....	$72,900.00	$44,072,194.97	$11,155,527.69	$29,409,055.96	$7,520,457.57	$1,271,647.23	$2,049,832.33	$95,551,615.75

HETCH HETCHY WATER SUPPLY AND POWER PROJECT
STATEMENT OF
ANNUAL BOND REDEMPTION BY FISCAL YEARS (CASH BASIS)

Redemption Dates	July 1	July 1	January 1	July 1	June 1	December 1	August 1 February 1 March 1	
Rate of Interest	Issue of 1909	Issue of 1910	Issue of 1925	Issue of 1928	Issue of 1932	Issue of 1933	Issue of 1947	Total
1¼%	.....	.....	.....	.....	.....	.....	$2,300,000.00	$2,300,000.00
1½%	.....	.....	.....	.....	.....	.....	800,000.00	800,000.00
1¾%	.....	.....	.....	.....	.....	.....	1,500,000.00	1,500,000.00
2%	.....	.....	.....	.....	.....	.....	1,500,000.00	1,500,000.00
2½%	.....	.....	.....	.....	.....	.....	3,750,000.00	3,750,000.00
2¾%	.....	.....	.....	.....	$324,000.00	.....	.....	324,000.00
3%	.....	.....	.....	.....	194,000.00	.....	.....	194,000.00
4%	.....	.....	.....	.....	280,000.00	$3,500,000.00	.....	3,780,000.00
4½%	$600,000.00	$45,000,000.00	.....	$24,000,000.00	143,000.00	.....	750,000.00	70,493,000.00
5%	.....	.....	$10,000,000.00	.....	1,234,000.00	.....	100,000.00	11,334,000.00
5¾%	.....	.....	.....	.....	4,325,000.00	.....	.....	4,325,000.00
Total Issues	$600,000.00	$45,000,000.00	$10,000,000.00	$24,000,000.00	$6,500,000.00	$3,500,000.00	$10,700,000.00	$100,300,000.00
Bonds Matured as of June 30, 1948.	$600,000.00	$29,000,000.00	$4,750,000.00	$6,000,000.00	$2,000,000.00	$2.450,000.00	.....	$44,800,000.00

Annual Redemption								
1948-49	.....	1,000,000.00	250,000.00	600,000.00	200.000.00	175,000.00	$375,000.00	2,600,000.00
1949-50	.....	1,000,000.00	250,000.00	600,000.00	200.000.00	175,000.00	575,000.00	2,800,000.00
1950-51	.....	1,000,000.00	250,000.00	600,000.00	200.000.00	175,000.00	675,000.00	2,900,000.00
1951-52	.....	1,000,000.00	250,000.00	600,000.00	200.000.00	175,000.00	725,000.00	2,950,000.00
1952-53	.....	1,000,000.00	250,000.00	600,000.00	200.000.00	175,000.00	875,000.00	3,100,000.00
1953-54	.....	1,000,000.00	250,000.00	600,000.00	200.000.00	175,000.00	875,000.00	3,100,000.00
1954-55	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	975,000.00	3,025,000.00
1955-56	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	1,125,000.00	3,175,000.00
1956-57	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	375,000.00	2,425,000.00
1957-58	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	375,000.00	2,425,000.00
1958-59	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	375,000.00	2,425,000.00
1959-60	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	375,000.00	2,425,000.00
1960-61	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	375,000.00	2,425,000.00
1961-62	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	375,000.00	2,425,000.00
1962-63	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	375,000.00	2,425,000.00
1963-64	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	375,000.00	2,425,000.00
1964-65	.....	.....	250,000.00	600,000.00	200,000.00	.....	375,000.00	1,425,000.00
1965-66	.....	.....	250,000.00	600,000.00	200,000.00	.....	375,000.00	1,425,000.00
1966-67	.....	.....	250,000.00	600,000.00	200,000.00	.....	375,000.00	1,425,000.00
1967-68	.....	.....	250,000.00	600,000.00	200,000.00	.....	375,000.00	1,425,000.00
1968-69	.....	.....	250,000.00	600,000.00	200,000.00	.....	.....	1,050,000.00
1969-70	.....	.....	.....	600,000.00	200,000.00	.....	.....	800,000.00
1970-71	.....	.....	.....	600,000.00	100,000.00	.....	.....	700,000.00
1971-72	.....	.....	.....	600,000.00	.....	.....	.....	600,000.00
1972-73	.....	.....	.....	600,000.00	.....	.....	.....	600,000.00
1973-74	.....	.....	.....	600,000.00	.....	.....	.....	600,000.00
1974-75	.....	.....	.....	600,000.00	.....	.....	.....	600,000.00
1975-76	.....	.....	.....	600,000.00	.....	.....	.....	600,000.00
1976-77	.....	.....	.....	600,000.00	.....	.....	.....	600,000.00
1977-78	.....	.....	.....	600,000.00	.....	.....	.....	600,000.00
Totals	.....	$600,000.00	$45,000,000.00	$10,000,000.00	$24,000,000.00	$6,500,000.00	$3,500,000.00	$10,700,000.00	$100,300,000.00

HETCH HETCHY POWER DIVISION
SCHEDULE No. 1
ELECTRIC PLANT IN SERVICE
June 30, 1949

		Balance June 30, 1948	Gross Additions July 1, 1948 June 30, 1949	Retirements July 1, 1948 June 30, 1949	Adjustments July 1, 1948 June 30, 1949	Balance June 30, 1949	Accrued Depreciation June 30, 1949
1001-A	HYDRAULIC PRODUCTION PLANT						
320	Land and Land Rights	$53,903.00	.....	.....	.....	$53,903.00	.....
321	Structures and Improvements	842,451.00	.....	.....	.....	842,451.00	$349,764.24
322	Reservoirs, Dams and Waterways	6,610,232.55	.....	.....	.....	6,610,232.55	2,668,490.88
323	Waterwheels, Turbines and Generators	936,307.63	.....	.....	.....	936,307.63	684,885.95
324	Accessory Electric Equipment	128,669.00	$2,053.16	.....	.....	130,722.16	106,085.94
325	Miscellaneous Power Plant Equipment	19,139.40	.....	.....	.....	19,139.40	16,053.68
326	Roads, Railroads and Bridges	20,203.00	.....	.....	.....	20,203.00	.....
		$8,610,905.58	$2,053.16	.....	.....	$8,612,958.74	$3,825,280.69
1001-B	TRANSMISSION PLANT						
340	Land and Land Rights	$50,299.99	.....	.....	.....	$50,299.99	.....
341	Clearing Lands and Rights of Way	38,212.00	.....	.....	.....	38,212.00	.....
342	Structures and Improvements	82,998.12	.....	.....	.....	82,998.12	$12,741.51
343	Station Equipment	578,543.20	.....	.....	.....	578,543.20	405,029.93
344	Towers and Fixtures	871,432.00	.....	.....	.....	871,432.00	512,356.86
345	Poles and Fixtures	39,232.00	.....	.....	.....	39,232.00	39,232.00
346	Overhead Conductors and Devices	1,044,546.58	.....	.....	.....	1,044,546.58	895,235.41
347	Underground Conduit	657.00	.....	.....	.....	657.00	631.08
348	Underground Conductors and Devices	1,115.00	.....	.....	.....	1,115.00	852.65
349	Roads and Trails	.....	.....	.....	.....	.....	.....
		$2,707,035.89	.....	.....	.....	$2,707,035.89	$1,866,079.44
1001-C	GENERAL PLANT						
370	Land and Land Rights	$1,128.00	.....	.....	.....	$1,128.00	.....
371	Structures and Improvements	726,081.82	$11,953.60	$2,534.00	.....	735,501.42	$426,220.91
372	Office Furniture and Equipment	3,924.00	488.12	175.00	.....	4,237.12	3,474.47
373	Transportation Equipment	15,196.44	.....	.....	.....	15,196.44	12,234.06
375	Shop Equipment	33,455.09	2,645.64	4,683.00	.....	31,417.73	23,154.92
377	Tools and Work Equipment	4,746.41	.....	.....	.....	4,746.41	4,411.58
378	Communication Equipment	548.65	.....	.....	.....	548.65	126.27
379	Miscellaneous Equipment	13,221.64	392.54	.....	.....	13,614.18	10,408.75
395	Unclassified	363,405.84	.....	.....	.....	363,405.84	.....
396	Undistributed	.....	308,022.43	.....	.....	308,022.43	.....
		$1,161,707.89	$323,502.33	$7,392.00	.....	$1,477,818.22	$480,030.96
		$12,479,649.36	$325,555.49	$7,392.00	.....	$12,797,812.85	$6,171,391.09
	See Schedule		1A	1B			1C

HETCH HETCHY POWER DIVISION
SCHEDULE No. 1-A
June 30, 1949
Gross Additions—July 1, 1948 to June 30, 1949

1001-A	PRODUCTION PLANT		
	324	ACCESSORY ELECTRIC EQUIPMENT	
		60-Cell Electric Storage Battery for Moccasin Power House	$2,053.16
1001-C	GENERAL PLANT		
	371	STRUCTURES AND IMPROVEMENTS	
		Reconstruction of Room on Cottage No. 23 at Moccasin	5,452.75
		Reconstruction of Living Quarters—Moccasin Store	6,157.95
		Garbage Can Wash Rack—Intake	342.90
	372	OFFICE FURNITURE AND EQUIPMENT	
		1 Flat Top Desk for Moccasin Office	132.64
		4 Office Chairs for Moccasin Office	189.89
		1 Clary Adding Machine for Moccasin Office	165.59
	375	SHOP EQUIPMENT	
		1 Air Cooled Compressor	1,743.64
		1 Gas Driven Welding Set	902.00
	379	MISCELLANEOUS EQUIPMENT	
		1 Vacuum Cleaner for Moccasin Clubhouse	176.56
		1 Hamilton Beach Food Mixer for Clubhouse	48.95
		1 Philco Radio for Moccasin Clubhouse	167.03
	396	UNDISTRIBUTED CAPITAL	
		Replacement of Needle Tips and Seat Rings	9,467.95
		Replacement of Awnings—Moccasin Clubhouse and Cottage	629.72
		Replacement of 1 Graphic Totalizing Megawatt Meter	2,086.90
		Replacement of Gas Powered Lawn Mower—Moccasin	146.06
		Replacement of Sewer Pipe—Moccasin	1,056.37
		Replacement of Foundations, Anchors and Generators—Moccasin	281,778.81
		Replacement of 3 Electric Ranges—Intake	911.61
		4 Electric Wall Heaters—Intake	58.54
		Motor Driven Generator Tester—Moccasin	130.80
		Water Heater for Moccasin Dormitory	129.16
		Refrigerator for Moccasin Power House	146.49
	396	UNDISTRIBUTED CAPITAL	
		6 Portable Electric Heaters	259.53
		1 7-inch Bench Shaper—Moccasin	419.54
		Combination Crimper and Bender—Moccasin	106.73
		Metalizing Gun—Moccasin	625.25
		Skilsaw Belt Sander and Assorted Belts—Moccasin	102.98
		Change Room and Erect Partitions Intake Bunkhouse and Lay Linoleum—Intake Cookhouse	9,471.73
		Cover for Water Tank—Intake	494.26
		Total Gross Additions	$325,555.49

HETCH HETCHY POWER DIVISION
SCHEDULE No. 1-B
June 30, 1949
Fixed Capital Retirements—July 1, 1948 to June 30, 1949

1001-C	GENERAL PLANT		
	371	STRUCTURES AND IMPROVEMENTS	
		Moccasin Cottage No. 37—Destroyed by Fire, June 12, 1949	$2,534.00
	372	OFFICE FURNITURE AND EQUIPMENT	
		Burroughs Adding Machine Traded in on Purchase of Clary Machine	175.00
	375	SHOP EQUIPMENT	
		Ingersoll Compressor Traded in for Air Cooled Compressor	3,683.00
		Gas Driven Welding Set—Traded in for Gas Welding Set	1,000.00
		Total Retirements	$7,392.00

SCHEDULE No. 1
HETCH HETCHY WATER SUPPLY
FIXED CAPITAL IN SERVICE
June 30, 1949

Account Number		Balance June 30, 1948	Gross Additions	Retirements	Adjustments	Balance June 30, 1949	Accrued Depreciation
1010-C2	Franchises and Water Rights	$2,735,630.00	.....	.....	.....	$2,735,630.00	.....
1015-C5	Landed Capital:						
A	Source of Water Supply Land	172,163.00	.....	.....	.....	172,163.00	.....
D	Right of Way Land	620,152.09	.....	$21,949.04	.....	598,203.05	.....
E	General Office and Other Lands	68,234.00	.....	.....	.....	68,234.00	.....
F	Roads, Trails and Tramways (Including H.H.R.R.)	919,148.99	.....	365.88	.....	918,783.11	$329,737.63
		$1,779,698.08	.....	$22,314.92	.....	$1,757,383.16	$329,737.63
1020-C6	Buildings, Structures and Grounds:						
A	Source of Water Supply Buildings and Fixtures	$144,252.17	.....	.....	.....	$144,252.17	$67,148.22
B	Pumping Stations, Buildings and Fixtures	11,014.00	.....	.....	.....	11,014.00	3,854.85
C	Purification, Buildings and Fixtures	28,210.00	.....	.....	.....	28,210.00	6,062.20
D	General Office and Other Buildings and Fixtures	1,250.00	.....	.....	.....	1,250.00	489.60
		$184,726.17	.....	.....	.....	$184,726.17	$77,554.87
1025-C7	Impounding Dams and Reservoirs	$16,349,162.33	.....	.....	.....	$16,349,162.33	$2,376,480.76
C8	Lake and River Cribs	747,423.15	.....	.....	.....	747,423.15	111,347.57
C13	Canals and Conduits	71,240,433.73	.....	.....	.....	71,240,433.73	14,905,659.67
		$88,337,019.21	.....	.....	.....	$88,337,019.21	$17,393,488.00
1030-C14	Pumping Equipment	$24,521.00	.....	.....	.....	$24,521.00	$17,164.55
1035-C16	Purification Capital	$37,207.00	.....	.....	.....	$37,207.00	$17,793.46
1045-C24	General Equipment:						
A	General Office Equipment	$11,397.52	$5,160.35	$225.00	.....	$16,332.87	$3,742.15
D	General Stable and Garage Equipment	64,693.34	2,741.83	113.00	.....	67,322.17	47,468.16
E	General Construction Equipment	50,320.35	10,223.58	153.00	.....	60,390.93	41,656.86
F	Railroad Rolling Stock	18,051.98	.....	.....	.....	18,051.98	14,408.80
G	Communication System Equipment	43,690.00	.....	.....	.....	43,690.00	25,577.04
H	Other Equipment	5,945.31	.....	.....	.....	5,945.31	3,134.06
		$194,098.50	$18,125.76	$491.00	.....	$211,733.26	$135,987.07
1049-C24J	General Capital Unclassified	$53,297.00	.....	.....	.....	$53,297.00	.....
1050-C25	Undistributed Construction Expenditures:						
A	Engineering Superintendence	$1,639.83	.....	.....	.....	$1,639.83	.....
F	Undistributed Construction Expenditures	*5,763.54*	.....	.....	.....	*5,763.54*	.....
G	Unallocated Capital Expenditures	.....	$166,813.39	.....	.....	166,813.39	.....
		$4,123.71	$166,813.39	.....	.....	$162,689.68	.....
		$93,342,073.25	$184,939.15	$22,805.92	.....	$93,504,206.48	$17,971,725.58
———	See Schedule		1-A	1-B			1-C

Italic figures denote loss and deficiency.

SCHEDULE No. 1-A
HETCH HETCHY WATER SUPPLY
June 30, 1949

Gross Additions to Fixed Capital—July 1, 1948 to June 30, 1949

1045 GENERAL EQUIPMENT

C24A GENERAL OFFICE EQUIPMENT

1	Sundstrand Adding Machine for S. F. Offices	$304.43
1	Burroughs Adding Machine for S. F. Offices	299.81
1	Steel Stencil File for S. F. Offices	66.88
1	Movable Table with Coasters for S. F. Offices	82.51
35	Steel Partitions for Files for S. F. Offices	25.66
6	5-Drawer File Sections for S. F. Offices	564.57
1	Ladder with attachment Files for S. F. Offices	34.85
2	Typewriter Desks for S. F. Offices	261.06
2	Posture Chairs for S. F. Offices	77.31
2	5 Drawer Files for S. F. Offices	174.35
1	Sorting Tray Base for S. F. Offices	17.43
1	Typewriter Desk for S. F. Offices	145.04
1	Table for S. F. Offices	81.22
1	Posture Chair for S. F. Offices	42.95
2	Side Chairs for S. F. Offices	85.69
3	Fleetwood Desks for S. F. Offices	340.19
3	Fleetwood Tables for S. F. Offices	174.14
1	Typewriter Desk for S. F. Offices	123.77
3	Telephone Cabinets for S. F. Offices	132.62
3	Book Cases for S. F. Offices	253.69
4	Costumers for S. F. Offices	73.80
8	Desk Trays for S. F. Offices	27.72
4	Waste Baskets for S. F. Offices	50.76
3	Swivel Chairs for S. F. Offices	126.84
1	Stenographer Posture Chair for S. F. Offices	38.44
12	Arm Chairs for S. F. Offices	387.44
6	Steel Plan File Cabinets for S. F. Offices	572.87
1	Typewriter Desk for S. F. Offices	123.77
6	Posture Chairs for S. F. Offices	230.62
1	Arm Chair for S. F. Offices	32.29
1	Table for S. F. Offices	55.35
3	Costumers for S. F. Offices	55.35
6	Desk Trays for S. F. Offices	20.79
6	Waste Baskets for S. F. Offices	76.14

C24D GENERAL STABLE AND GARBAGE EQUIPMENT

1	1949 Chevrolet Panel Truck Fleet No. 132-A	2,398.83
3	Autos transferred from S. F. W. D. Fleet Nos.130-131-132	343.00

C24E GENERAL CONSTRUCTION EQUIPMENT

1	Motor Grader—Fleet No. 1182	10,223.58

1050 UNDISTRIBUTED CONSTRUCTION EXPENDITURES

C25G UNALLOCATED CAPITAL EXPENDITURES

Replace Cottage at Lake Eleanor	33,853.68
Replace Water Pipes and Sewer, Mather Cottages	1,482.91
Replace 36 Beds, Intake, Damsite and Lake Eleanor	279.95
Replace Small Tools	45.77
Replace Bolt Thread Cutting Machine	1,829.53

Replace Power Hacksaw	1,293.20
Replace Valve Refacer and Attachments	239.84
Replace Power Driven Saw	1,287.50
Replace Kitchen and Dining Room Equipment	439.96
Replace Utilities at Lake Eleanor	1,795.35
Replace Water Tank at Lake Eleanor	1,907.11
Replace Ram and Pipe—Water Supply—Lake Eleanor	1,071.77
Replace Pneumatic Spader	235.75
Replace Wheelbarrows with Concrete Buggies	105.58
Replace Camp Buildings at Lake Eleanor	24,293.93
Replace 3000 ft. of 2 inch Pipe Line to South Fork R. R. Tank	966.50
Replace Fence Across Moccasin Dam, Moccasin	393.39
Replace 6 Wooden Cattle Guards, S. J. Pipe Line	928.34
Replace Fence around open cut—Oakdale Portal S. J. P. L.	543.46
Replace Fences, Exposed Pipe Sections West of Oakdale Portal S. J. P. L.	1,043.04
Replace Gates, Headwalls and Culverts—S. J. P. L.	989.63
Replace Ties and Culverts on H. H. Railroad	10,075.12
Replace Approach to Middle Fork Bridge	976.81
Replace Battery Charging Set, Alameda East Portal	2,029.50
Replace Road Grader with Motor Patrol	9,134.63
Replace Furniture at Mather Cottages	852.03
Replace Trail with Road—Intake	8,430.04
Bakeoven at Damsite	553.51
9 cu. ft. Refrigerator at Lake Eleanor	287.77
Water Heater at Mather Cottage	80.62
2 Jackhammers and Airhose—Oakdale	404.14
1 Sno-Cat and 2 Trailers—Equipment for 92-175-176	7,277.40
Fencing and Improving Grounds at Oakdale	13,846.76
Sluiceway and Control Gate—Cherry Diversion Dam	37,838.87
Total Additions	$184,939.15

SCHEDULE No. 1-B
HETCH HETCHY WATER SUPPLY
June 30, 1949

Gross Retirements from Fixed Capital—July 1, 1948 to June 30, 1949

1015	LANDED CAPITAL		
	C5D	RIGHT OF WAY LAND	
		Book Value of 24.7 Acres of Land in Sweeney Ranch—San Mateo County	$21,949.04
	C5F	ROADS, TRAILS AND TRAMWAYS	
		Book Value of 2 Parcels of Hetch Hetchy Land near Smith Station Tuolumne County, Sold to James N. Crawford	365.88
1045	GENERAL EQUIPMENT		
	C24A	GENERAL OFFICE EQUIPMENT	
		Dalton Adding Machine Traded in on Sunstrand	225.00
	C24D	GENERAL STABLE AND GARAGE EQUIPMENT	
		1940 Chevrolet Station Wagon Fleet No. 132 Traded in on Chevrolet Panel Truck	113.00
	C24E	GENERAL CONSTRUCTION EQUIPMENT	
		4 Wheel Pneumatic Spring Trailer Wrecked—Traded in on Gas Driven Welding Set	153.00
		Total Retirements	$22,805.92

PUBLIC UTILITIES COMMISSION
1932 HETCH HETCHY BOND FUND APPROPRIATIONS
Period Ended June 30, 1949

Appropriation Number		Appropriated	Expenditures	Encumbrances	Total Expenditures and Encumbrances	Unencumbered Balance of Appropriation
92.000.00	Unallotted Balance of Appropriation	$151.97	.....	.....	.....	$151.97
92.052.51	Preliminary Surveys, Investigations and Improvements Cherry River Development Project	50,000.00	.....	.....	.....	50,000.00
.234.7/2	Possible Future Expense in Connection with Industrial Cases	530.31	$81.68	.....	$81.68	448.63
.500.50	Surveys, Studies and Preliminary Plans for Dams, Aqueducts and Other Features of Cherry River Development	99.14	99.14	.....	99.14	.....
.500.51	Preliminary Investigations, Surveys and Improvements, Cherry River Development Project	66,247.82	43,113.74	$9,000.00	52,113.74	14,134.08
.500.57	Purchase and Installation of Equipment in Connection with Contract with Modesto and Turlock Irrigation Districts	10,439.88	1,398.61	8,087.00	9,485.61	954.27
.500.58	Acquisition of Land for Connection between H. H. Transmission Lines and Modesto Irrigation District Power System	377.01	.....	250.00	250.00	127.01
.604.09	Expenses Incurred Resisting Claims on Riparian Owners and Land Damage Claims	2,859.09	.....	.....	.....	2,859.09
		$130,705.22	$44,693.17	$17,337.00	$62,030.17	$68,675.05
4990	Unappropriated Balance of Funds	22,920.24	.....	.....	.....	22,920.24
		$153,625.46	$44,693.17	$17,337.00	$62,030.17	$91,595.29
	Expenditures	44,693.17				
	Treasurer's Balance	$108,932.29				

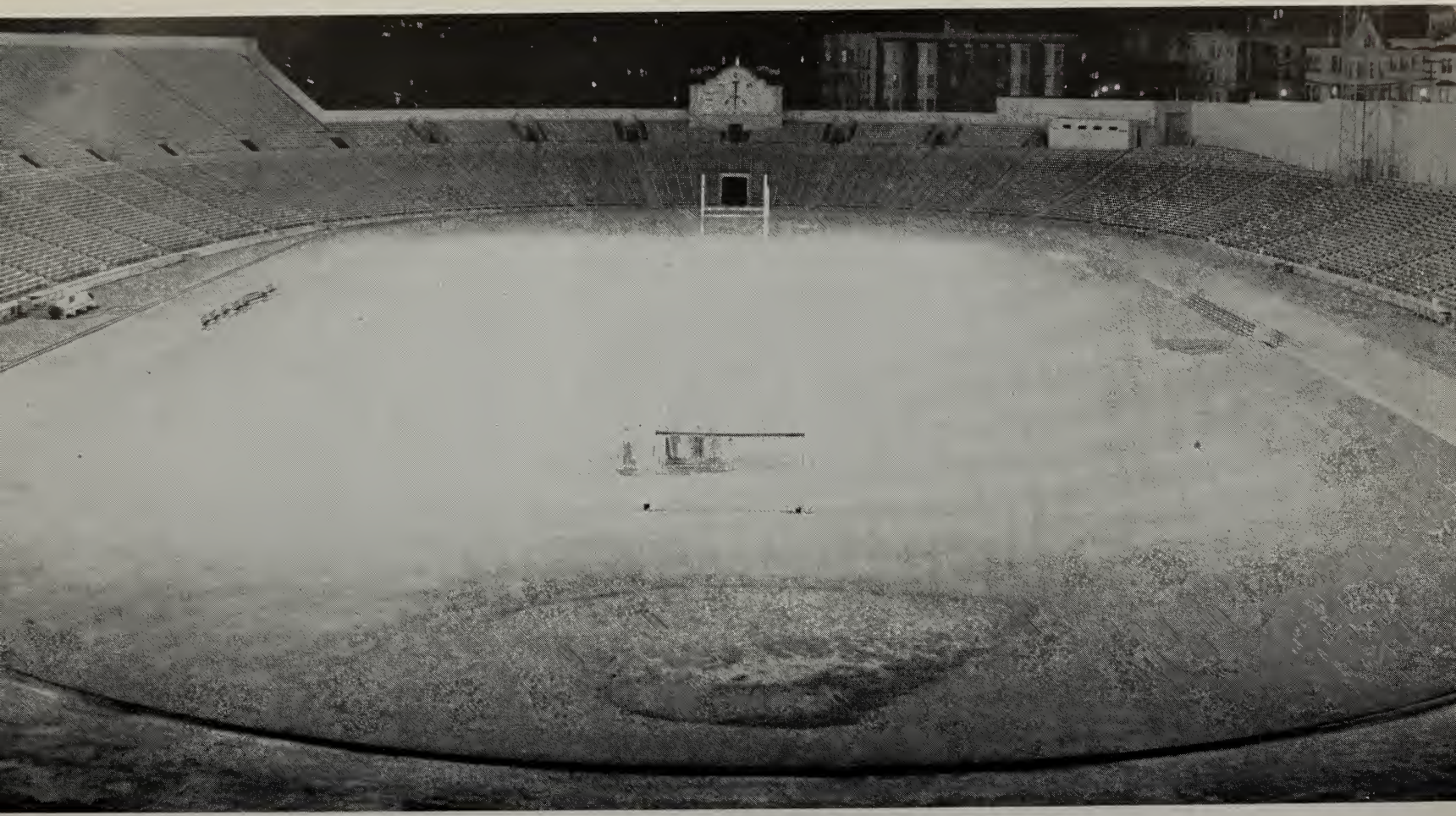
ANNUAL REPORT—HETCH HETCHY BUREAU
AUTOMOTIVE EQUIPMENT OPERATIONS FOR 1948-1949
July 1, 1948 to June 30, 1949—Account 7051

Car No.	Make and Model	License Number	Mileage	Gal. Gas	Miles per Gal.	Qts. Oil	Operating Costs	Operating Credits	Net Gain or Loss	Revised Rate per Mile August '49
1-B	1942 Oldsmobile Club Coupe	E-65 686	6,295	462	13.6	34	$156.71	$421.14	$264.43	.06
2-B	1941 Chevrolet Coupe	62 136	10,730	700	15.3	48	255.65	759.27	503.62	.06
3-B	1947 Ford Panel Truck 1-ton	71 959	13,849	1,542	9.0	88	993.64	1,835.91	842.27	.10
4-B	1941 Chevrolet ½-ton Canopy Express	62 823	6,171	593	10.4	47	447.02	593.40	146.38	.08
5-A	1948 Chevrolet ½-ton Pickup Truck	75 505	7,945	640	12.4	44	315.95	726.68	410.73	.08
6-A	1941 Chevrolet Pickup ½-ton	62 141	2,820	323	8.7	37	147.88	265.19	117.31	.08
7-B	1948 Chevrolet ½-ton Pickup Truck	75 504	7,785	823	9.5	47	415.59	731.58	315.99	.08
8-A	1942 Chevrolet Tudor Sedan	63 755	1,749	235	7.4	7	200.59	147.63	*52.96*	.06
9-B	1942 Chevrolet De Luxe 4-door Sedan	63 756	7,802	526	14.8	65	1,003.01	626.46	*376.55*	.06
10-A	1942 Chevrolet De Luxe Sport Sedan	63 670	6,866	486	14.1	60	769.30	396.34	*372.96*	.06
11-C	1946 Chevrolet Pickup, ½-ton	29 389	12,019	779	15.4	64	502.37	1,026.30	523.93	.08
12-C	1947 Ford Super De Luxe Sedan Coupe	74 244	20,761	1,448	14.3	59	467.52	1,334.53	867.01	.06
13-A	1941 Ford Pickup ½-ton	61 991	8,570	983	8.7	33	314.75	807.20	492.45	.08
14-A	1942 Chevrolet Pickup ½-ton	63 671	5,258	483	10.9	35	438.00	485.80	47.80	.08
17-A	1947 Chevrolet Stake Side Truck 1½-ton	71 966	5,043	545	9.3	19	146.20	666.78	520.58	.12
18-A	1947 Ford Pickup Truck, ½-ton	71 047	6,775	739	9.2	74	577.27	574.91	*2.36*	.08
19	White Railroad Bus	.....	186	39	4.8	7	11.15	36.56	25.41	.20
22	1946 Cadillac Sedan 4-door	70 081	11,572	1,072	10.8	11	893.98	1,049.76	155.78	.10
23	1948 Chevrolet Carryall Suburban	76 117	17,182	1,169	14.7	56	473.03	1,624.18	1,151.15	.08
24	1948 Buick 41 Special 4-door Sedan	73 402	15,793	1,081	14.6	16	299.37	1,496.22	1,196.85	.08
25	1948 Buick 41 Special 4-door Sedan	76 433	5,901	451	13.1	11	161.62	569.08	407.46	.08
26	1948 Chevrolet 4-door Sport Sedan	76 514	15,844	1,028	15.4	33	256.74	1,124.16	867.42	.06
27	1948 Chevrolet 4-door Sport Sedan	76 513	4,139	287	14.4	1	82.73	297.14	214.41	.06
30	1922 Buda Railway Speeder	.....	.....	.....	...	....	39.40	.....	*39.40*	.20
31-A	1942 Nash Coupe	28 855	10,310	593	17.4	52	444.00	645.22	201.22	.06
33	1948 Chevrolet Station Wagon	76 511	19,454	1,301	15.0	73	603.11	1,829.64	1,226.53	.08
34	1948 Chevrolet Station Wagon	76 510	31,256	1,977	15.8	83	738.50	2,922.64	2,184.14	.08
44	1945 Chevrolet Truck 1½-ton	29 357	11,661	1,365	8.5	61	759.44	1,486.79	727.35	.12
45	1945 Chevrolet Truck 1½-ton	29 358	6,781	726	9.3	32	452.60	908.24	455.64	.12
50	1946 F.W.D. Tractor, 12-ton	30 020	2,168	1,088	2.0	33	509.05	871.12	362.07	.50
51	1946 Trailmobile—Semi-Trailer	3977	2,168	.....	...	....	30.68	301.01	270.33	.10
91	1948 Tucker Sno-Cat	76 437	359	118	3.0	....	567.72	107.70	*460.02*	.30
92	1948 Tucker Sno-Cat	78 347	389	137	2.8	6	840.89	116.70	*724.19*	.30
103-A	1941 Chevrolet Pickup ¾-ton	62 140	7,072	357	19.8	31	391.54	782.76	391.22	.10
108	1920 White Winch Truck 5-ton	20 746	97 hrs.	184	.5	4	275.05	145.50	*129.55*	.64*
112-A	1948 Chevrolet 6 Chassis and Cab 2-ton	75 741	5,734	708	8.1	39	411.34	1,086.67	675.33	.16
114-A	1948 Chevrolet 2-ton Truck	75 632	4,740	721	6.6	29	467.75	880.28	412.53	.16
121	1924 White Winch Truck 2-ton	20 176	144	68	2.1	9	30.38	43.20	12.82	.30 mi.

123-A	1947 Cadillac 4-door Sedan	74 835	13,490	1,378	9.8	6	938.23	1,349.00	410.77	.10
130	1941 Plymouth Station Wagon	65 195	4,056	371	10.9	40	808.41	405.60	*402.81*	.10
131	1941 Chevrolet Carryall	64 378	2,328	252	9.2	22	199.76	232.80	33.04	.10
132	1940 Chevrolet Station Wagon	65 200	.....	.....	...	.. .	170.51	127.70	*42.81*	.10
132-A	1949 Chevrolet 1-ton Panel Truck	.....	1,277	115	11.1	9	31.19	.....	*31.19*	.10
175	Sno-Cat Trailer	6036	.....	.....	...	....	2.53	.....	*2.53*	.05 mi.
177	Homemade Trailer	6042	.....	.....	...	....	1.83	.....	*1.83*	.05 mi.
200	1936 F.W.D. Truck 4-5 ton	20 177	2,145	995	2.2	81	1,257.07	1,069.79	*187.28*	.50
201	1938 F.W.D. Line 2½-3 ton Truck	25 665	725	221	3.3	12	138.16	131.48	*6.68*	.20
202	1936 F.W.D. Line 1½-ton Truck	20 178	1,169	490	2.4	38	922.54	278.95	*643.59*	.20
206-A	1947 Chevrolet 1-ton Pickup	71 048	3,396	390	8.7	25	134.00	370.16	236.16	.10
208-B	1947 Dodge Pickup ½-ton	70 615	4,840	420	11.5	22	105.46	434.87	329.41	.08
209-B	1942 Mercury Sedan	28 995	8,628	673	12.8	9	813.28	748.67	*64.61*	.06
210	1941 Chevrolet Suburban Carryall	62 737	12,992	1,044	12.4	59	938.34	1,329.57	391.23	.10
211	1942 Ford V-8 Coupe	63 874	14,981	1,312	11.4	108	788.19	999.24	211.05	.06
212	1942 Ford 4-door Sedan	63 947	12,372	940	13.2	45	463.18	872.28	409.10	.06
213	1942 Ford Station Wagon	63 946	17,692	1,671	10.6	134	997.32	1,662.84	665.52	.08
214	1942 Ford 4-door Sedan	64 053	3,300	291	11.3	47	224.41	249.54	25.13	.06
215	1942 Ford Station Wagon	64 052	26,235	1,658	15.8	108	875.80	2,494.08	1,618.28	.08
216	1942 Ford Station Wagon	63 948	10,708	1,231	6.6	63	1,037.72	1,105.42	67.70	.08
217	1942 Ford Station Wagon	63 940	3,926	448	8.8	17	623.10	377.24	*245.86*	.08
218	1939 Dodge 1-ton Pickup	64 364	2,055	283	7.3	17	393.68	248.03	*145.65*	.10
219	1941 Chevrolet ½-ton Pickup	64 756	4,338	411	10.6	37	388.83	404.40	15.57	.08
220	1946 Ford 4-door Sedan	30 736	22,552	1,493	15.1	27	609.55	1,630.23	1,020.68	.06
225	1942 Pontiac Sedan Torpedo 8	**64 495**	7,662	692	10.7	4	858.77	642.49	*216.28*	.08
226	1942 Pontiac Sedan Torpedo 8	64 493	11,588	857	13.5	10	769.55	998.44	228.89	.08
227	1942 Pontiac Sedan Torpedo 8	64 494	10,983	844	13.0	79	1,088.23	930.60	*157.63*	.08
228	1942 Chevrolet Sedan Sportmaster	64 480	6,588	476	13.8	46	1,192.17	544.88	*647.29*	.06
229	1942 Chevrolet Sedan Special De Luxe	64 478	5,398	508	10.6	22	593.76	444.22	*149.54*	.06
1160	1942 Caterpillar Tractor 40 h.p.	.....	179 hrs.	553	.3	265	488.21	537.00	48.79	3.00 hr.
1170	Plymouth Locomotive 8-ton	.....	78	43	1.8	2	31.83	18.72	*13.11*	.25 mi.
1171	Plymouth Locomotive 20-ton	.....	4	20	.2	....	14.51	2.40	*12.11*	.60 mi.
1172	P & H Shovel ⅝ cu. yard	.....	5 hrs.	25	.2	....	2.89	17.50	14.61	3.50 hr.
1173	Rotary Snow Plow—Railroad	.....	.....	.....	...	....	13.04	.....	*13.04*	3.00 hr.
1174	Caterpillar Tractor 40 h.p.	.....	173 hrs.	781	.2	146	1,545.57	519.00	*1,026.57*	3.00 hr.
1176	Plymouth Locomotive 8-ton	.....	.....	.....	...	....	18.04	.....	*18.04*	.50 mi.
1177	Motor Driven Snow Plow	.....	44 hrs.	222	.2	15	589.60	308.00	*281.60*	7.00 hr.
1178	Caterpillar Tractor-Bulldozer	.....	96 hrs.	288	.3	72	77.30	192.00	114.70	2.00 hr.
1180	Gas Road Roller 10-ton	71 878	11 hrs.	50	.2	1	14.30	22.00	7.70	2.00 hr.
1181	Power Grader	74 937	235 hrs.	279	.8	33	217.31	470.00	252.69	2.00 hr.
1182	1948 Gallon 4 Motor Grader (Diesel)	76 818	220 hrs.	250	.9	159	575.30	660.00	84.70	3.00 hr.
Rental of 5 Sedans from Evans Auto Rental		.....	8,965	747	12.0	8	1,264.56	1,485.23	220.67	.17†
	Totals		528,822	48,499		3,136	$38,109.55	$54,038.06	$15,928.51	

*$.64 per mile or $2.70 per hour. †$.17 each Sedan per mile.

Italic figures denote loss and deficiency.



BRIGHT AS DAYLIGHT

The New Kezar Stadium lights make the playing field a regular pool of brightness.

BUREAU OF LIGHT, HEAT AND POWER

B. A. DEVINE

Manager and Chief Engineer

B. A. DEVINE
Manager and Chief Engineer

The functions of this Bureau include in addition to the design, construction and operation of the street lighting system, the purchase of utility services for all departments of the city. The Bureau therefore controls the yearly disbursement of approximately two and three-quarter million dollars of city funds.

These functions are under the management of B. A. Devine, assisted by G. W. Dolen in charge of street lighting operation and maintenance; W. C. Eggert in charge of street lighting design and construction; and E. W. Balzer in charge of gas and electric supply. Much of the credit for efficient operation of the Bureau must go to these men.

The Bureau consists of engineers, draftsmen, accountants, clerks and stenographers, a total of 19 employees at the end of the fiscal year.

The year's expenditures for gas, electricity and street lighting are shown in Table No. I. Special attention is called to the engineering, supervision and office expense cost, which is but 2.47 per cent of the total.

Street Lighting Operation

During the year 386 new lights were installed in the various districts throughout the city.

With 12 major street lighting contracts entered into during the fiscal year, and the development of new streets and housing projects, the number of new lights will be greater than the 1948-49 period.

At the close of the year, 26,163 lights were in service, 2,136 being jointly owned with the Pacific Gas and Electric Company and 19,130 wholly owned by the Pacific Gas and Electric Company, 4,897 being wholly owned by the city.

City-owned lights have increased from 934 in 1932-33 to 4,897 in 1948-49, an increase of 3,963 lights. With a surplus of over $300,000 in our construction fund for new lights, plus new private tract developments, we will be able to increase the number of city-owned lights and also eliminate fixed charges on replaced company-owned lights.

Table I shows a total expenditure of $859,189.27 for street lighting operations during the year. This total includes operation and maintenance costs for all light-

FULTON STREET BEFORE

FULTON STREET, AFTER

New Pendent street lights banish those patches of darkness between the light standards which existed between the old lights.

COMBINATION LIGHT AND TROLLEY POLES ON GEARY STREET

ing equipment in streets, parks, viaducts, tunnels and underpasses. The increase over last year's expenditure of $835,229.27 was due to new lights, replacements and repairs, materials purchased for stock, office and automotive equipment.

The number of requests received by this Bureau for improved street lighting increased from 119 in 1947-48 to 144 at the end of June, 1949. This increase was due to the development of unimproved streets and tracts in the various sections of the city.

Requests for shades on the house-side of lights were discouraged, because this tends to reduce street illumination by eliminating light reflected from buildings upon the sidewalk and street areas.

With the cooperation of the Police Department, interested citizens and the Pacific Gas and Electric Company, and also inspections by this Bureau, the number of lights reported out of service totaled 26,246, representing a saving of $2,396.57 in outage credits. The number of outages decreased from 44,962 in 1947-48 to 26,246 at the end of June, 1949. This decrease was due to replacement of burned out lamps by group replacement lamps, which have longer burning life.

All records of installations and revisions made during the fiscal year were entered on our record cards and maps by the end of July, 1949.

Table V shows collections made for damage to city-owned street light standards during the 1948-49 fiscal year, amounting to $5,081.09, of which this Bureau collected $2,941.89, a decrease of $1,354.31 over the year 1947-48. $270.63 was abandoned as uncollectible.

Table IX shows street lighting operations by months. Energy cost of $427,345.60 was paid the Hetch Hetchy and $423,111.07 was paid to the Pacific Gas and Electric Company for maintenance and fixed charges.

Table X shows the number and type of street lights in use and their ownership, both underground- and overhead-connected.

Engineering Construction:

During the preceding fiscal year, the following street lighting contracts were entered into and were completed this year:

Contract No.	Location
43	Geary Blvd., Divisadero Street to Masonic Avenue.
44	Geneva Avenue, Mission Street to Alemany Boulevard.
46	Guerrero Street, Market Street to Army Street.
49	Third Street, 23rd Street to Custer Avenue.
50	Union Square Garage.
53	Third Street, Custer Avenue to Bay Shore Boulevard.
55	Seventh Street, Mission Street to Townsend Street.
56	Powell Street, California Street to Broadway
58	Tenth Street, Market Street to Division Street, and Fell Street, Market Street to Van Ness Avenue.
59	Vicinity of Civic Center, and Hyde Street, Market Street to California Street.
60	Army Street, Sec. 1, Harrison Street to South Van Ness Avenue.
61	California Street, Presidio Avenue to Maple Street.
65	Market Street, Clayton Street to Corbett Avenue, and Portola Drive, Corbett Avenue to Evelyn Way.
68	Fulton Street, Divisadero Street to Masonic Avenue.
70	Harrison Street, 2nd Street to 10th Street.

The lighting projects completed during the year which were initiated by the Department of Public Works are as follows:

Gough Street, Market Street to Otis Street.
Masonic Avenue, Geary Blvd., to 467 feet northerly.
Army Street, Sec. 1, Harrison Street to South Van Ness Avenue (conduit and foundations).
Geary Street, Divisadero Street to Masonic Avenue (conduit and foundations).

Also during the year, real estate operators completed the development of Lakeshore Park Subdivision No. 3, Part 1, which included the installation of a complete underground street lighting system, consisting of 42 one-light, 24-ft. concrete pendent electroliers.

This Bureau drafted the plans and specifications for the lighting system and maintained strict inspection during installation. After a high voltage test was applied, it was deeded by the developers to the city for lighting and maintenance.

Engineering and inspection service was also furnished to the Park Commission for the installation of a new transformer bank, primary underground service, secondary feeders and panelboards at Fleishhacker Pool.

The change of lighting equipment on Market Street ("Path of Gold") and adjacent streets ("Triangle District") was completed during the fiscal year. This work consisted of replacement of existing magnetite arc lamps with incandescent high voltage series lamps.

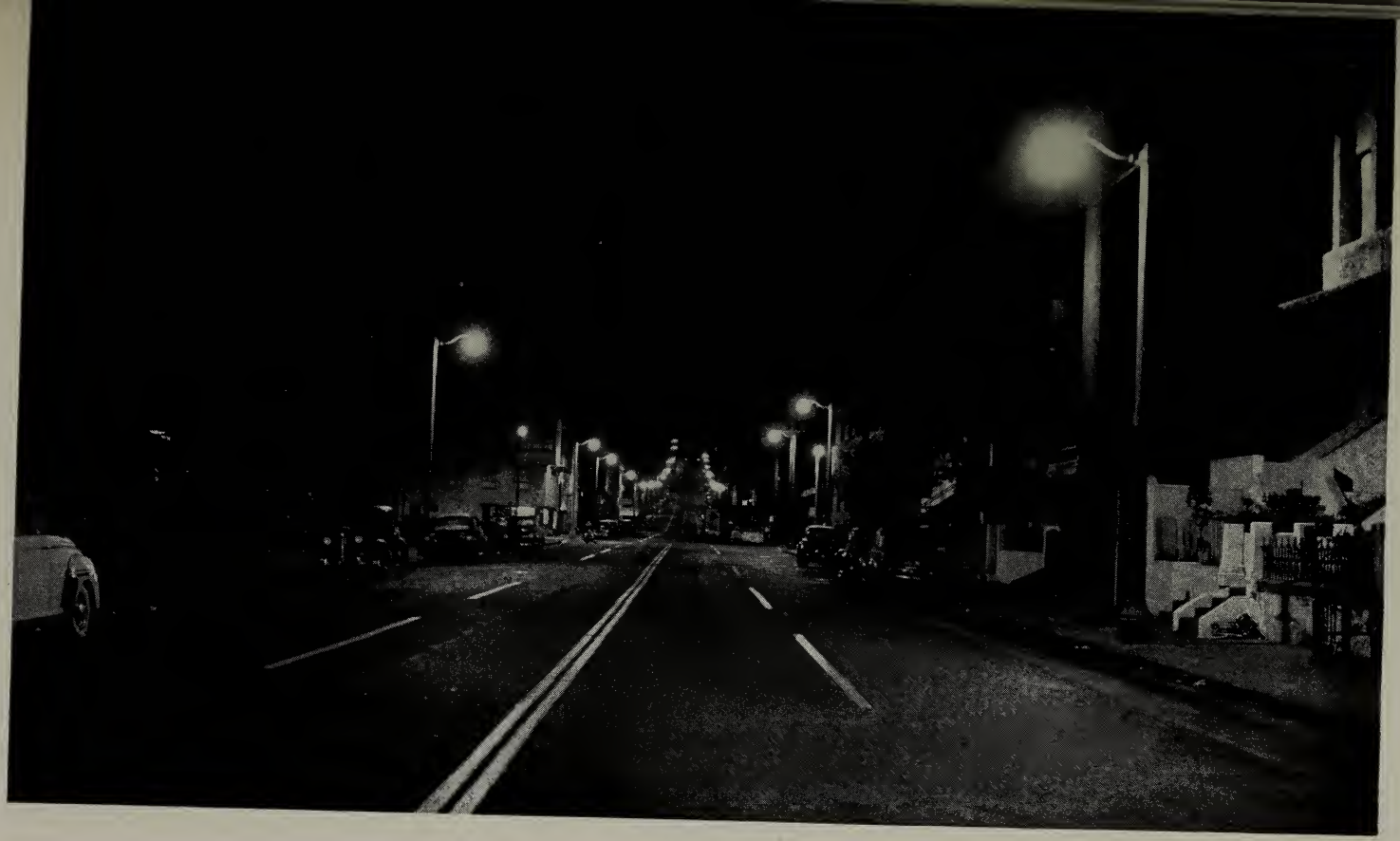
Plans and specifications were drafted by this Bureau for the Municipal Railway for trolley coach overhead and switch control of trolley ladders at the Potrero carhouse. The system is designed to accommodate 250 coaches by using the 17th Street and Mariposa Street levels.

Street lighting contracts which were entered into and which are scheduled for completion during the ensuing year, are as follows:

Contract No.	Location
62	O'Shaughnessy Boulevard, Portola Drive to Congo Street.
64	Geneva Avenue, Mission Street to County Line.
66	Castro Street, Market Street to 19th Street.
67	Bryant Street, 2nd Street to 10th Street.
69	Post Street, Pierce Street to Presidio Avenue, and Presidio Avenue, Post Street to Geary Boulevard.
71	Anza Street, Masonic Avenue to Parker Avenue.
72	Folsom Street, The Embarcadero to 10th Street.
73	Harrison Street, The Embarcadero to 2nd Street.
74	Bernal Avenue, Dolores Street to Joost Avenue.
76	Bush and Pine Streets, Van Ness Avenue to Presidio Avenue.
78	8th Street, Market Street to Townsend Street.

The Bureau of Light, Heat and Power is engineering and supervising construction of the Kezar Stadium floodlighting system for the Park Commission. The project consists of the installation of 6 120-foot steel towers, 324 playing field lights and 26 lights for lighting the seating and parking areas.

Electrical engineering inspection service is being furnished by this Bureau to the Recreation Commission for floodlighting Folsom Playground, which consists of installing the primary underground service, 38 floodlighting units on 13 steel poles, feed cables and a new service switchboard.



SAFETY FIRST
New lights on Post Street make this arterial a safer street for automobiles and pedestrians.

Engineering work and studies are now nearing completion for the installatio of a fluorescent lighting system in Stockton Street tunnel. The present sodiur vapor luminaries and feeder system serving the tunnel require frequent repairs which are proving rather costly.

This Bureau is also drawing up plans and specifications for an undergroun street lighting system for the real estate operators developing Stonestown Sub division.

Following is a list of street lighting projects for which it is contemplated con tracts will be let during the ensuing year. Specifications and drawings for a num ber of these systems are now ready to be submitted for bidding.

Location	Nature of Wor
Townsend St., The Embarcadero to 4th St.	Modernization
Army St., Sec. 2, South Van Ness to Guerrero St.	New Lighting
Third St., Market St. to Mission St.	New Lighting
Third St., at Islais Creek, Marin St. to Arthur Ave.	New Lighting
Turk St., Market St. to Van Ness Ave.	New Lighting
Mission St., The Embarcadero to Beale St.	New Lighting
The Embarcadero, Market St. to Howard St.	Modernization
*Guerrero St., San Jose Ave., Army St. to Brooks St.	New Lighting
Sixth St., Market St. to Townsend St.	Modernization and Addition
Fifth St., Market St. to Townsend St.	Modernization
Irving St., 7th Ave. to 9th Ave.	New Lighting
Mission St., Silver Ave. to Onondaga Ave.	New Lighting
Army St., Potrero Ave. to Harrison St.	Modernization
Sloat Blvd., Junipero Serra Blvd. to Great Highway	Modernization
Alemany Blvd., Sta. 19+00 to Mission St.	Modernization
Alemany Blvd., Mission St. to San Jose Ave.	Modernization
*Monterey Blvd., Ridgewood Ave. to San Anselmo Ave.	New Lighting
Second St., Howard St. to Harrison St.	New Lighting
Junipero Serra Blvd., Sloat Blvd. to County Line	Modernization
19th Ave. Extn., Sloat Blvd. to Junipero Serra Blvd.	Modernization and Additions
Harrison St., 10th St. to 14th St.	New Lighting
Trumbull St., Mission St. to Alemany Blvd.	New Lighting
Parker Ave., Turk St. to Anza St.	New Lighting
Bay Shore Blvd., 3rd St. to County Line	Modernization
O'Farrell St., Mason St. to Van Ness Ave.	New Lighting
Ellis St., Mason St. to Van Ness Ave.	New Lighting
Eddy St., Mason St. to Van Ness Ave.	New Lighting

The Recreation Commission will receive from the Bureau of Light, Heat and Power during the ensuing year, engineering and inspection service for floodlighting various playgrounds throughout the city which are now being considered for improvement by the Commission.

This Bureau will also furnish the Park Commission with plans and specifications for completing the improvement of inner and outer Yacht Harbor lighting and utilities system.

*Contingent upon new construction program of Department of Public Works.

Gas and Electric Supply:

During the fiscal year, 7,757,257 cubic feet of natural gas and 141,132,816 kilowatt-hours of electricity were used for municipal purposes, exclusive of street lighting. For these utilities the City paid $276,240.82 to the Pacific Gas and Electric Company for gas and $1,559,162.51 to the Hetch Hetchy for electric energy. The purchases were made through one steam, 457 gas and 833 electric accounts. Segregation and cost of various accounts are shown in Tables VII and VIII.

The two accounts under rate schedule P-9 cover traction energy for the Municipal Railway, and the 46 D.C. and 29 A.C. meters involved are distributed in 13 substations. It is necessary to test these meters bi-monthly because of the large amount of energy used by the railway. For the fiscal year and for traction energy only, the Railway used 78,976,690 kw hours at a cost of $775,220.89. This represents a decrease of 25.1 per cent in energy use as compared to the prior year, which is brought about by the substitution of gasoline-driven buses for electric trolley cars on certain routes.

The overall use of electricity shows a decrease of 11.9 per cent as compared to the prior year. A substantial increase of 37.4 per cent over last year is shown by the Airport Department. This increase is brought about by the expansion of the Airport electrical distribution facilities to accommodate new consumer and airport loads. However, the large decrease in electrical energy usage by the Municipal Railway offsets the Airport increase and the net increase of the Building Lighting, Education, Park, Police, Public Works and Water Department combined.

There are nine departments whose annual electric usages are over 1¼ million kilowatt hours.

The unit prices for gas and electricity have been analyzed by rate schedules in Tables VII and VIII. The average cost of gas was 3.5615 cents per hundred cubic feet and electricity was 1.1068 cents per kilowatt hour.

During the year, there occurred one increase and two decreases in the price of fuel oil, resulting in a change from $2.20 to $1.85 per barrel. Two electric rate schedules (P-9 and P-30), which cover two of the larger accounts, have fuel clauses which cause the energy rates to vary with the price of oil.

The annual contract with the Pacific Gas and Electric Company provides for the purchase of all city gas requirements at the regular rate schedules, one of which (GS) is affected by the same change in the price of fuel oil as affects the electric rate schedules. The G accounts, of which there are 450, are not affected by a change in the price of oil. A "stopper" clause in this schedule allows no increase in the effective rate for any block above the effective rate of the next preceding block.

The annual contract with the Pacific Gas & Electric Company also provides for the purchase of street lighting services other than energy. The Company still has a large investment in the street lighting system of the city and supplies all of the maintenance for equipment, whether company- or city-owned.

The option of paying 2 cents per kilowatt hour for power or 2¾ cents for lighting is still maintained and is exercised by the Bureau in favor of the department as soon as it is apparent from our surveys of plant operating cost that a saving can be accomplished, thus eliminating the annual adjustment of accounts.

One of the most important functions of this Bureau is that of the application of the technical features of the various gas and electric rate schedules. In order that

TOUCHDOWN!
Light tower at Kezar Stadium would provide good seat for football game.

TWIN SENTINELS

The Kezar Stadium light towers tower over even the taller trees in Golden Gate Park.

the proper rate schedules may be applied, it is necessary to maintain a constant physical survey of plant operation and cost for each account. This often discloses reasons for changes to plant or plant operation that will result in a lower cost for gas or electricity. The Bureau then recommends such changes and offers the design and inspection services required.

The cost of gas and electricity used by the various departments is shown by functions and municipal government, as follows:

4 Utilities	$2,147,802.55	77.59%
16 Governmental Departments	340,815.07	12.31%
7 Social and Recreational Departments	126,225.64	4.56%
1 School	153,456.50	5.54%
	$2,768,299.76	100.00%

Forty-three new gas and electric services were established during the year, and 29 were discontinued.

Inter-Departmental Work:

At the San Francisco Airport, 27 tenants purchased 13,055,278 kilowatt hours of electricity from the city-owned distribution system through 43 meters and 9 flat-connected accounts, at rates similar to those of the Pacific Gas and Electric Company for various types of services. A total of $134,838.91 was collected and credited to the Airport account. The cash profit on this resale amounted to $24,456.45.

Electric energy used to pump water through the jointly owned line to the Coast Guard Radio Station near Sharp Park was billed and credited monthly by this Bureau to the Park Commission or Sheriff. The credit for pumping is determined by noting which department actually does the pumping for the particular month in question.

The Police Department summary of electricity includes an account labelled Miscellaneous Traffic Devices, which lists all of the unmetered traffic signals and devices within the City and County. It is the function of this Bureau to bill this account each month on a flat basis per unit of time per type of signal. This function requires constant contact with existing installations, as well as new installations. During the fiscal year, 802 new 3-light units and 14 neon units were installed and 191 units of the Wiley type were discontinued.

Inter-Departmental Engineering:

During the past fiscal year, this Bureau furnished engineering services and advice—aside from street lighting—on matters relative to the use of gas and electricity. Typical examples are shown in the following list:

Park Commission:

Kezar Stadium Floodlighting—complete plans and specifications, and inspection.

Recreation Commission:

Sigmund Stern Grove—Plans and specifications for light and power system. Inspection of construction.

Camp Mather—Preliminary survey and plans for new electric service and distribution system.

Auditorium—Plans and specifications for electrical work on Third Floor (Recreation Commission).

San Francisco Hospital—Design of lighting for 1st floor north and 2nd floor south.

ureau of Architecture:

Galileo High School—Plans for new electrical distribution system.

Tax Collector's Office—Plans and specifications for re-lighting.

Main Library—Plans and specifications for re-lighting three large rooms.

City College of San Francisco—Plans and specifications for re-lighting dormiries for classroom work.

Civil Service Commission—Plans and specifications for lighting examination om.

City College of San Francisco—Plans and specifications for light and power stem in the Paint Technology Laboratory.

Health Department—Plans and specifications for lighting of Health Center at th and Sanchez Streets.

unicipal Railway:

17th and Mariposa Street Yard—Design of overhead trolley system and trolley dder controls.

n Francisco Airport:

Voltage regulation problems, surveys, setting of recording meters, discussions d advice.

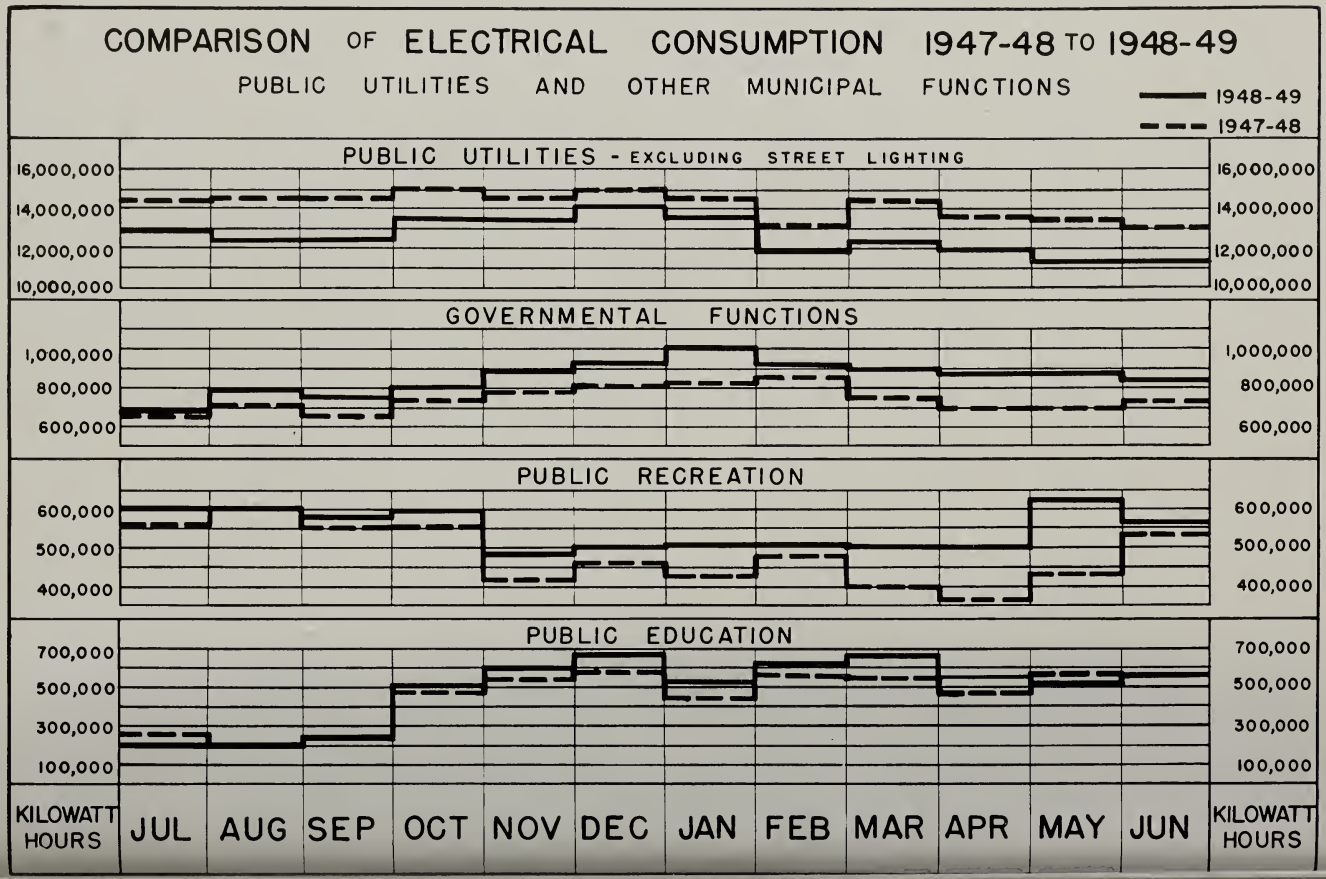
ater Department:

Millbrae Yard Drafting Room—Plans and specifications for re-lighting.

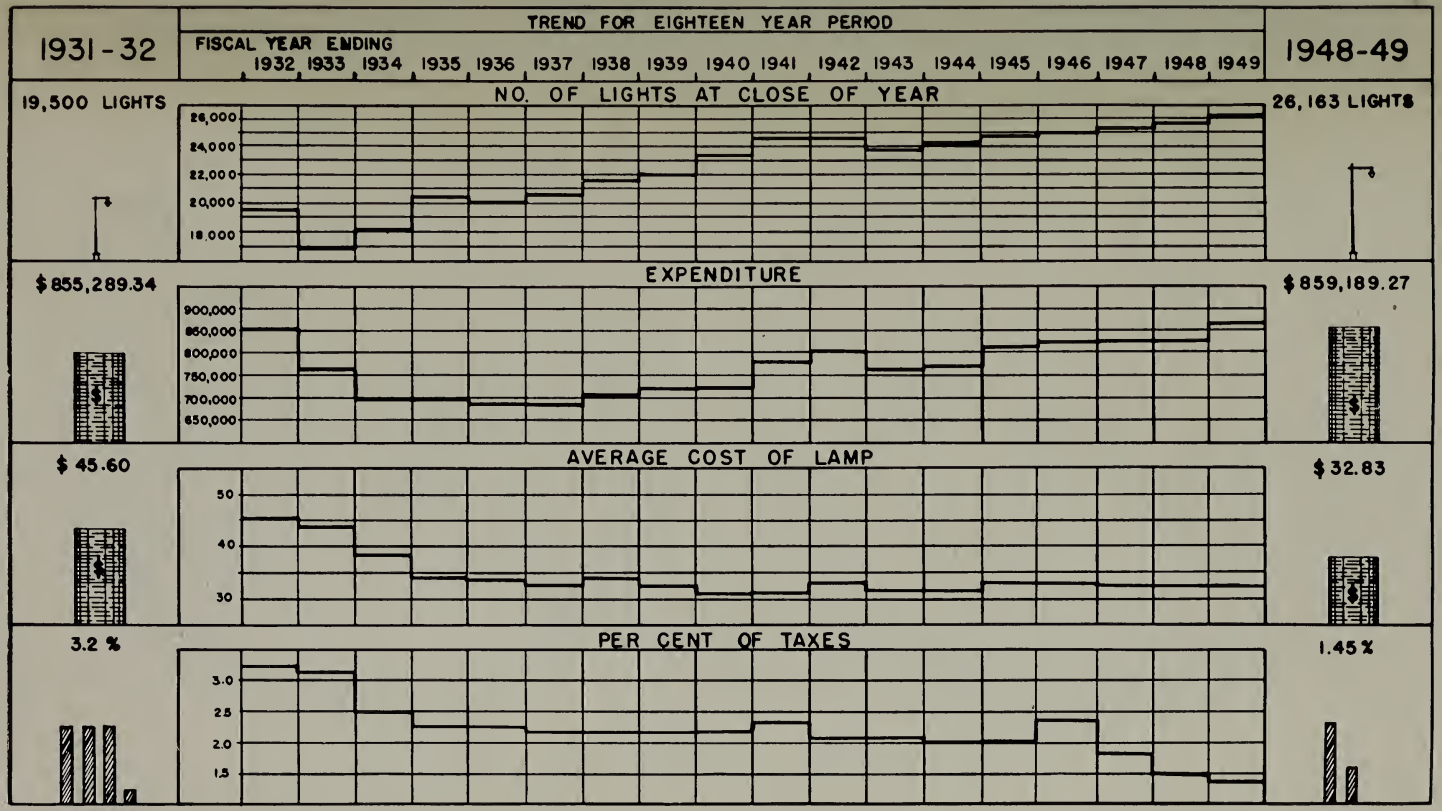
Crystal Springs Pumps—Consultation on and checking of plans and specifications for electric motor power and controls.

The foregoing list of projects under Inter-Departmental Engineering are those a major nature. This Bureau is constantly occupied with many activities relating to the use of gas and electricity by the various city departments which are not affed and equipped to cope with such problems.

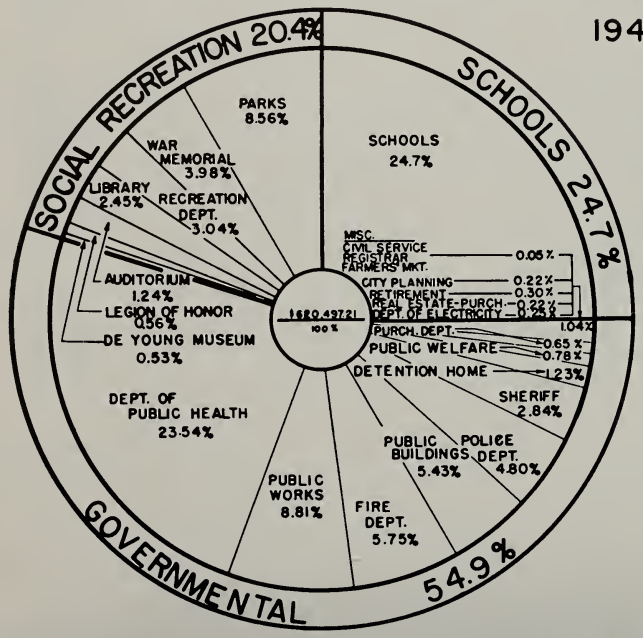
This Bureau's constant physical survey of all city properties—which is mandatory for our operation—is advantageous in rendering such services as operating st surveys and reports; consultation and advice; special seasonal lighting problms; motor and other electrical equipment testing; advice on the maintenance distribution systems; electric watthour meter testing and the ever-present nalyses of gas and electric rate schedules.


COMPARISON OF ELECTRICAL CONSUMPTION 1947-48 TO 1948-49
PUBLIC UTILITIES AND OTHER MUNICIPAL FUNCTIONS
1948-49
1947-48
PUBLIC UTILITIES - EXCLUDING STREET LIGHTING
16,000,000
14,000,000
12,000,000
10,000,000
GOVERNMENTAL FUNCTIONS
1,000,000
800,000
600,000
PUBLIC RECREATION
600,000
500,000
400,000
PUBLIC EDUCATION
700,000
500,000
300,000
100,000
KILOWATT HOURS
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
KILOWATT HOURS

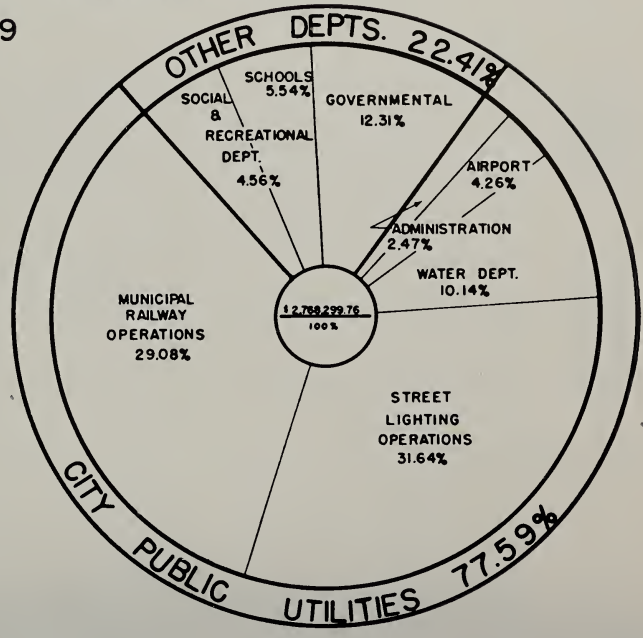
REVIEW OF STREET LIGHTING COST



DIVISION OF ANNUAL EXPENDITURES
1948-49



GAS AND ELECTRICITY BY DEPARTMENTS
OTHER THAN THE PUBLIC UTILITIES



GAS AND ELECTRICITY
BY FUNCTIONS

TABLE No. I

EXPENDITURES FOR LIGHT, HEAT AND POWER FOR MUNICIPAL PURPOSES

1948-1949

GAS AND ELECTRIC SUPPLY:			
Electricity for Light and Power (excluding street lighting)	$1,562,114.51		
Gas for Heat and Power	276,292.40		
Steam for Heat	2,465.77	$1,840,872.68	
Adjustment		—18.08	
Total			$1,840,854.60
STREET LIGHTING OPERATION:			
Gross Contract Cost		$852,853.24	
Less: Outages		2,396.57	
Net Operating Cost		$850,456.67	
Maintenance, Replacements and Repairs	$10,852.98		
Less: Collections for Damages	5,081.09	5,771.89	
Materials Purchased for Stock		937.38	
Office Equipment		848.71	
Automotive Equipment		1,174.62	
Total			859,189.27
ENGINEERING, SUPERVISION AND OFFICE EXPENSE			68,255.89
Total Expenditures for Light, Heat and Power			$2,768,299.76

TABLE No. II

REVIEW OF STREET LIGHTING COST

1931-1949

Fiscal Year	No. Lights at Close of Year	Expenditures	Per Cent of Taxes	Avg. Cost Per Lamp Per Year
1931-32	19,500	$855,289.34	...	$45.60
1932-33	17,369	762,938.84	3.10	43.93
1933-34	18,115	696,126.56	2.48	38.43
1934-35	20,383	698,701.94	2.32	34.28
1935-36	20,060	677,128.37	2.24	33.76
1936-37	20,576	674,869.86	2.15	32.79
1937-38	21,378	711,737.60	2.21	33.29
1938-39	22,028	728,786.00	2.18	33.08
1939-40	23,376	727,167.60	2.18	31.10
1940-41	24,504	780,130.33	2.29	31.82
1941-42	24,604	801,189.98	2.03	32.56
1942-43	23,873	761,471.28	2.05	31.89
1943-44	24,153	771,384.97	1.99	31.93
1944-45	24,889	821,092.24	2.02	32.99
1945-46	25,040	833,525.06	2.38	33.29
1946-47	25,313	838,758.65	1.79	33.14
1947-48	25,777	835,229.27	1.50	32.40
1948-49	26,163	859,189.27	1.45	32.83

TABLE No. III

NEW CITY-OWNED STREET LIGHTING CONSTRUCTION COMPLETED DURING 1948-1949

Location	No. of Lights	Financed by	Value
Geary St., Divisadero St. to Masonic Ave., and	49		
Masonic Ave., Geary St. to O'Farrell St.	8	Bureau of Light, Heat and Power	$20,337
Geneva Ave., Alemany Blvd. to Mission St.	10	Bureau of Light, Heat and Power	2,902
Guerrero St., Market St. to Army St.	138	Bureau of Light, Heat and Power	44,765
Third St., 23rd St. to Custer Ave.	61	Bureau of Light, Heat and Power	14,340
Union Square Garage	16	Bureau of Light, Heat and Power	10,792
Third St., Custer Ave. to Bay Shore Blvd.	157	Bureau of Light, Heat and Power	28,007
Seventh St., Mission St. to Townsend St.	46	Bureau of Light, Heat and Power	23,743
Powell St., California St. to Broadway	21	Bureau of Light, Heat and Power	11,721
Tenth St., Market St. to Division St., and	57		
Fell St., Market St. to Van Ness Ave.	7	Bureau of Light, Heat and Power	11,122
Vicinity of Civic Center, and	53		
Hyde St., Market St. to California St.	55	Bureau of Light, Heat and Power	27,365
Army St., Sec. 1, Harrison St. to So. Van Ness	29	Bureau of Light, Heat and Power	9,239
California St., Presidio Ave. to Maple St.	19	Bureau of Light, Heat and Power	11,942
Market St. Extn., Clayton St. to Corbett Ave.,	33		
and Portola Dr., Corbett Ave. to Evelyn Way.	40	Bureau of Light, Heat and Power	13,247
Fulton St., Divisadero St. to Masonic Ave.	29	Bureau of Light, Heat and Power	16,409
Harrison St., 2nd St. to 10th St.	60	Bureau of Light, Heat and Power	11,721
Gough St., Market St. to Otis St.	18	Department of Public Works	7,449
Masonic Ave., Geary St. to 467 ft. Northerly	2	Department of Public Works	1,594
Lakeshore Park Subdivision, Part 1	42	Property Owners	22,987
			$289,682

TABLE No. IV

INVESTMENT IN CITY-OWNED STREET LIGHTING

	City Funds				Federal Funds		Property	
	D.P.W.	P.U.C.	Park	Muny. Ry.	W.P.A.*	P.W.A.	Owners	Total
Prior to July 1, 1932	$223,185	.....	.....	....	.....	.....	$22,370	$245,555
Fiscal Year 1932-33	37,288	.....	.....	....	.....	.....	.....	37,288
1933-34	71,005	.....	.....	....	.....	.....	.....	71,005
1934-35	18,618	$93,550	.....	....	.....	.....	6,652	118,820
1935-36	9.540	15,110	.....	....	$11,745	$3,847	7,649	47,891
1936-37	22,863	172,079	.....	....	67,463	17,411	33,049	312,865
1937-38	15,069	69,805	.....	....	112,191	.....	14,444	211,509
1938-39	13,721	6,458	.....	....	48,033	.....	25,353	93,565
1939-40	7,072	9,957	.....	....	75,380	.....	14,339	106,748
1940-41	10,910	5,380	.....	....	45,376	.....	40,827	102,493
1941-42	2,445	1,980	.....	....	13,720	.....	32,800	50,945
1942-43	8,345	3,969	.....	....	.....	.....	3,718	16,032
1943-44	4,902	470	.....	....	.....	.....	371	5,743
1944-45	.....	450	.....	....	.....	.....	5,738	6,188
1945-46	.....	298	$1,166	....	.....	.....	350	1,814
1946-47	.....	4,357	.....	....	.....	.....	.....	4,357
1947-48	76,768	112,615	14,295	$1,110	.....	.....	112,847	317,635
1948-49	9.043	257,652	.....	....	.....	.....	22,987	289,682
Total, June 30, 1949	$530,774	$754,130	$15,461	$1,110	$373,908	$21,258	$343,494	$2,040,135
Less portion removed								35,000
Remaining Original Cost, June 30, 1949								$2,005,135
Accrued Depreciation, June 30, 1949								914,604
Depreciated Value as of June 30, 1949								$1,090.531
Reasonable Annual Depreciation Expense (Fiscal Year 1948-49)								81,969
Average Rate of Depreciation								4.09%

*Includes City's Sponsorship Proportion.

TABLE No. V

STATEMENT OF CLAIMS BILLED AND COLLECTIONS MADE FOR DAMAGE TO CITY-OWNED STREET LIGHTING EQUIPMENT

July 1, 1948, to June 30, 1949

	Bureau of Light, Heat and Power	Bureau of Delinquent Revenue	Total
Accounts Receivable:			
July 1, 1948	$1,024.98	$2,612.79	$3,637.77
Claims filed during year	5,894.29	.....	5,894.29
Transfers	2,798.88	2,798.88	.....
Total	$4,120.39	$5,411.67	$9,532.06
Credits:			
Collections during year	$2,941.89	$2,139.20	$5,081.09
Accts. abandoned, uncollectible	.....	270.63	270.63
Total	$2,941.89	$2,409.83	$5,351.72
Accts. Receivable. June 30, 1949	$1,178.50	$3,001.84	$4,180.34

TABLE No. VI
DEPARTMENTAL GAS AND ELECTRICITY
CONSUMPTION AND EXPENDITURES

CONSUMPTION					EXPENDITURES					
—Electricity—		—Gas—								
No. Accts.	KWH	No. Accts.	C/Cu. Ft.	Department	Electric	Gas	Total	Credits and Adjustments	Inter-Dept. Transfers	Totals
5	13,814,534	7	40,103	*Airport	$110,653.87	$1,670.41	$112,324.28	.....	-$5,469.35	$117,793.63
7	707,190	1	1,508	Auditorium	9,921.16	61.92	9,983.08	.....	—2,300.95	7,682.13
7	2,682,971	..	.....	Building Lighting	31,440.51	.....	31,440.51	.....	+2,300.95	33,741.46
1	55,100	1	5,320	City Planning Commission	1,181.32	199.47	1,380.79	.....	.....	1,380.79
1	360	2	104	Civil Service Commission	9.90	6.43	16.33	.....	.....	16.33
4	167,316	..	.....	de Young Museum	3,292.72	.....	3,292.72	.....	.....	3,292.72
5	60,862	2	12,348	Electricity	1,125.59	460.40	1,585.99	.....	.....	1,585.99
1	92,160	1	620	Employees' Retirement System	1,837.78	29.65	1,867.43	.....	.....	1,867.43
1	1,454	..	.....	Farmer's Market	40.01	.....	40.01	.....	.....	40.01
66	837,909	99	394,029	Fire	20,768.76	14,937.94	35,706.70	—$7.85	.....	35,698.85
1	417,360	3	318,275	Hassler Health Home	5,297.12	12,780.13	18,077.25	.....	.....	18,077.25
18	1,351,380	19	3,262,112	Health	18,351.39	109,953.36	128,304.75	—4.39	—301.80	127,998.56
1	3,724	..	.....	Hetch Hetchy Power Operating	164.18	.....	164.18	.....	.....	164.18
2	2,282	1	209	Hetch Hetchy Water Supply	106.70	12.66	119.36	.....	.....	119.36
3	177,498	1	5,056	Juvenile Court and Det. Home	2,819.37	189.95	3,009.32	.....	.....	3,009.32
..	.....	1	2,718	Laguna Honda Childrens School	.....	105.79	105.79	.....	.....	105.79
5	170,404	..	.....	Legion of Honor	3,464.60	.....	3,464.60	.....	.....	3,464.60

26	747,360	24	66,485	Libraries	12,579.97	2,589.71	15,169.68	.....	.....	15,169.68
6	141,628	..	.....	Log Cabin Ranch School	3,903.14	.....	3,903.14	.....	.....	3,903.14
40	80,734,636	14	163,958	Municipal Railway	799,010.28	5,997.13	805,007.41	—5.84	.....	805,001.57
1	15,480	1	7,268	Ocean View School for Girls	387.12	269.59	656.71	.....	.....	656.71
77	2,690,285	28	263,345	Park	43,530.89	9,566.92	53,097.81	.....	.....	53,097.81
62	1,310,534	13	57,160	Police	27,075.79	2,158.82	29,234.61	.....	+594.40	29,829.01
2	137,540	1	2,233,000 lbs.	Public Welfare	2,390.40	2,465.77	4,856.17	.....	.....	4,856.17
37	2,205,938	6	40,584	Public Works	53,195.16	1,506.56	54,701.72	.....	.....	54,701.72
13	152,545	5	19,219	Purchasing	3,311.10	730.51	4,041.61	.....	.....	4,041.61
18	17,250	6	24,616	Real Estate Purchases	445.98	922.03	1,368.01	.....	.....	1,368.01
63	614,765	29	34,891	Recreation	16,683.93	1,431.66	18,115.59	.....	.....	18,115.59
4	24,262	3	2,736	Recreation—Teen Age Centers	613.93	120.66	734.59	.....	.....	734.59
2	7,876	2	724	Registrar	216.63	41.13	257.76	.....	.....	257.76
280	5,856,551	166	1,078,753	S. F. Unified School District	113,206.73	40,249.77	153,456.50	.....	.....	153,456.50
2	647,440	3	281,464	Sheriff	7,419.66	10,552.10	17,971.76	.....	—292.60	17,679.16
4	.....	..	.....	State Highways	16,816.24	.....	16,816.24	.....	.....	16,816.24
2	1,189,600	3	224,436	War Memorial	16,566.40	8,102.12	24,668.52	.....	—6,124.09	18,544.43
..	.....	..	.....	War Memorial Art Museum	.....	.....	.....	.....	+6,124.09	6,124.09
64	24,070,912	14	1,444,550	Water	230,819.98	48,952.32	279,772.30	.....	.....	279,772.30
2	25,710	1	4,666	Water Dept. Yard	514.20	175.91	690.11	.....	.....	690.11
833	141,132,816	457	7,757,257	Total	$1,559,162.51	$276,240.82	$1,835,403.33	—$18.08	+$5,469.35	$1,840,854.60
Street Lighting Operations—Engineering, Supervision and Office Expense										927,445.16
										$2,768,299.76

*Airport—Pan American and Southwest Airlines included in Airport—Gas and Electric ($5,469.35).

TABLE No. VII
PURCHASE OF ELECTRICITY BY SCHEDULES

Lighting and Miscellaneous Use

Schedule	No. Accts.	K.W.H.	Cost	Cost per K.W.H. Cents
$.0275	221	391,876	$10,779.20	2.7507
C-1	53	16,319,370	212,635.05	1.3030
C-6	9	16,402,943	137,169.73	.8363
D-1	7	31,866	472.82	1.4838
D-5	2	3,760	93.91	2.4976
D-6	6	46,970	756.37	1.6103
DA-6	2	31,406	527.53	1.6797
L-1	256	5,001,268	116,266.55	2.3247
L-5	3	45,464	1,377.08	3.0289
L-6	19	186,252	5,933.65	3.1858
L-21	1	2,242	80.11	3.5731
L-31	1	597	40.80	6.8342
L-34	4	233,866	2,748.52	1.1753
L-35	2	9,892	255.18	2.5797
Total	586	38,707,772	$489,136.50	1.2637

For Power

$.02	196	1,499,582	$29,996.24	2.0003
H-1	5	177,682	2,246.95	1.2646
P-1	10	304,792	4,985.84	1.6358
P-2	1	40	26.59	66.4750
P-3 and 13	10	1,549,022	20,814.20	1.3437
P-5	1	3,643,200	32,884.88	.9026
P-7	..	.....	.....	....
P-9	2	78,976,690	775,220.89	.9816
P-15	10	1,881,240	25,749.98	1.3688
P-17	1	187,447	3,400.21	1.8140
P-30	1	13,420,800	114,103.66	.8502
Total	237	101,640,495	$1,009,429.44	.9931
Contract	7	784,549	$60,364.27	7.6941
Schedule 1	1	.....	60.62	....
Schedule 10	1	.....	90.53	....
Schedule 16	1	.....	3,033.15	....
Total	10	784,549	$63,548.57	8.1000
Grand Total	833	141,132,816	$1,562,114.51	1.1068

TABLE No. VIII
PURCHASE OF GAS BY SCHEDULES

For General Use

Schedule	No. Accts.	Cubic Feet	Cost	Cents per 100 cu. ft.
G-1	428	241,833,800	$90,384.78	3.7375
G-3	7	1,857,000	735.47	3.9605
G-5	1	20,900	12.66	6.0574
G-6	14	39,370,000	17,118.87	4.3482
Totals	450	283,081,700	$108,251.78	3.8240

For General Heat and Power

Contract	1	.....	$1,344.00	....
GS-1	4	467,343,000	157,237.63	3.3645
GS-2	1	25,301,000	9,440.91	3.7314
Total	6	492,644,000	$168,022.54	3.4106
Gas Total	456	775,725,700	$276,274.32	3.5615
Steam S-1	1	2,233,000 lbs.	$2,465.77	11.0424 cwt.
Grand Total	457	.....	$278,740.09	....

TABLE No. IX
STREET LIGHTING OPERATION BY MONTHS—1948-1949

Kilowatt Hours, Maintenance and Fixed Charges

	KWH	Cost	Maintenance and Fixed Charges	Total Cost
July	2,052,544	$27,325.58	$45,243.62	$72,569.20
August	2,343,464	31,238.53	40,676.26	71,914.79
September	2,597,484	34,664.68	35,056.92	69,721.60
October	2,939,364	39,240.09	32,995.25	72,235.34
November	3,129,498	41,820.41	27,900.14	69,720.55
December	3,388,099	45,289.14	26,705.26	71,994.40
January	3,361,659	44,933.50	27,159.43	72,092.93
February	2,826,184	37,759.79	27,638.23	65,398.02
March	2,792,289	37,275.35	34,789.92	72,065.27
April	2,435,070	32,480.15	87,588.89	70,069.04
May	2,235,314	29,783.86	42,687.47	72,471.33
June	1,918,674	25,534.52	44,669.68	70,204.20
Total	32,019,643	$427,345.60	$423,111.07	$850,456.67

TABLE No. X
NUMBER AND TYPE OF STREET LIGHTS IN USE
June 30, 1949

	Jointly Owned	City Owned	Company Owned
Series Incandescent:			
Underground-connected:			
10,000 lumens	123	531	1,090
6,000 lumens	645	2,639	529
4,000 lumens	688	991	2,842
2,500 lumens	416	453	341
1,000 lumens	243	...	...
1,000 watts	...	8	...
500 watts	4	...	...
300 watts	17	8	372
200 watts	...	56	15
150 watts	...	10	...
100 watts	...	6	11
60 watts	...	156	...
50 watts	...	4	...
Overhead-connected:			
10,000 lumens	...	...	17
6,000 lumens	...	...	379
4,000 lumens	...	...	13,135
2,500 lumens	...	...	371
300 watts	...	...	17
200 watts	...	...	11
Special:			
10,000 lumen sodium vapor	...	19*	...
20,000 lumen mercury vapor	...	16	...
Total	2,136	4,897	19,130
	8.16%	18.72%	73.12%

Grand Total—1949, 26,163; 1948, 25,777—386 new lights.

*Maintenance by work order.

BIGGEST PLANE IN USE

The Navy's "Constitution" can carry 180 passengers. Was popular display at airport.

SAN FRANCISCO AIRPORT DEPARTMENT

B. M. DOOLIN
Manager and Chief Engineer

B. M. DOOLIN
Manager, Chief Engineer
San Francisco Airport

The phenomenal growth of aviation and its importance to the trade and commerce of this City is reflected in the continuing expansion of the San Francisco Airport, and the steady increases in air passengers, air mail and air cargo now handled by our Airport.

Mayor Elmer E. Robinson recognizes that problems of airports and aviation have no geographical or political boundaries, and that locally these same problems affect the entire metropolitan Bay Area; therefore, upon his request and recommendation an "Airport Plan" for the San Francisco Bay Area has now been developed by the San Francisco Bay Area Council, Inc., and the Bay Area Aviation Committee.

As of today, thirteen air carriers, domestic and international, operate from the City's two terminal buildings on the Airport. These air carriers and their operations provide the City with a challenging and complex problem. The safety economic stability, and future of the air carriers' operations is, to an important degree, dependent upon the ability of San Francisco to

(a) provide modern facilities to users at reasonable rates;
(b) coordinate operational functions to all users of the Airport;
(c) maintain the premises in conformity with the exacting requirements of the Federal Civil Air Regulations; and
(d) provide service to air commerce and the public in a manner consistent with the importance of our City as a world trade center.

So that the public may understand the amount of effort and coordination necessary to make air travel smooth and efficient, this report for the fiscal year of 1947-48 describes in considerable detail the essential functions, activities, facilities, and occupations of this department and federal agencies at the Airport.

SUMMARY OF ACTIVITIES

Air transportation and related aviation business has expanded so rapidly that it has been necessary to construct temporary facilities to handle traffic until such time as permanent installations can be constructed. Passengers are now using a 1936 terminal building; yet the number of terminal flight schedules has in-

MESSAGE CENTER
The CAA communications center teletype machines connect airport with all important centers of aviation activity.

creased so much, it was necessary to double aircraft loading and unloading capacity during the past year. Fourteen four-engine aircraft may now be accommodated simultaneously at the Airport's Domestic Terminal Building, and passengers have safe, convenient passage from aircraft to building due to an improved canopy type concourse constructed when the aircraft parking positions were increased.

More than a million passengers and over 22,000 tons of airmail, air express and freight was serviced at the Airport during the past year and the pay roll earned by 6,000 workers in aviation activities has now reached $23 million annually. The tremendous increases in the volume of air freight also made it necessary to erect a new building devoted to this and airmail service. In order to service aircraft and conduct increased operational activities, air carrier tenants of the Airport have had to make considerable physical and equipment improvements in the areas which they lease from the City.

The need for an adequate terminal building was emphasized when an overflow crowd of 3,500 stood shoulder to shoulder in the lobby of the Airport's passenger terminal to welcome home the USF Basketball Team, 1949 National Champions, from their triumph in New York. This event, a happy one for the Dons and their supporters, revealed the inadequacy of the present terminal building in the light of today's air traffic.

FLY OR WAIT?
These weather maps will tell whether aircraft will operate or stay on ground.
Big U. S. Weather Bureau located at airport.

New airline services were established during the past year by foreign and domestic air carriers. American Airlines was authorized by the Civil Aeronautics Board to provide direct service from San Francisco to Mexico City. British Commonwealth Pacific Airlines began operations between Sidney, Australia; San Francisco; and Vancouver, British Columbia. China National Aviation Corporation inaugurated its route from San Francisco to China. Canadian Pacific flies from Canada to Australia via San Francisco. California Central Airlines offered an innovation in air transportation when they began regularly scheduled trips between San Francisco and Los Angeles at rates comparable to surface transportation. April saw the first flight of a two-deck fuselage aircraft from the San Francisco Airport. This plane, the Boeing Stratocruiser, used by Pan American Airways, flies between San Francisco and Honolulu. Last year, airplanes operated from the San Francisco Airport consumed ten million dollars' worth of gasoline (approximately 35 million gallons), and to better handle this business, both Shell Oil Company and Trans World Airlines completed the erection of bulk storage plants on the Airport. These new plants are in addition to the Standard Oil Company bulk storage plant and make possible economical deliveries of gasoline in large quantities by barge.

San Francisco is recognized throughout the aviation industry as a leader in airport development and numerous visitors secured information on the Airport's development program and policies during the last twelve months. The Airport

was visited by governmental parties from Switzerland and Holland, preparatory to launching airport programs in those countries, as well as by aviation officials from all parts of the United States. The Airport Operators Council, a national organization composed of major air terminals—each handling at least 1 per cent of the Nation's air traffic—was recently established to coordinate the efforts of airports in solving mutual problems, and has now elected the Manager of the San Francisco Airport Department as its president.

The planned development of the San Francisco Airport as a major metropolitan air terminal, received a severe setback when the electorate failed to approve the bond issue of $8,600,000 by the required two-thirds majority at last November's election. Of the 287,031 citizens who voted on the Airport Bond issue proposal, 60.26 per cent favored the proposition. These additional funds were vitally needed so the Airport could be completed as planned in 1945 when a $20 million bond issue was approved. Increases in construction costs since 1945, technological aviation advancements, and new Federal design standards for airports, have required an expenditure of more funds than was originally anticipated. Additional capital will be required to develop the basic facilities necessary to accommodate trade and commerce through San Francisco and to make the Airport financially self sufficient; however, the requirements for these terminal facilities should be carefully analyzed. Good air transportation service is an integral part of our communications system and San Francisco cannot prosper without it.

The first runway constructed with the 1945 bond funds was placed in operation last March. Capable of sustaining heaviest aircraft, this new runway is 6,500 x 200 feet and will be used during northerly or southerly wind conditions. Extensive construction is in progress on the Airport under a $4,250,000 contract covering runways, taxiways, paving, grading, utilities, and other basic facilities. Of this sum, the Federal Government has agreed to provide up to $2,352,500 under the Federal Airport Aids Act, and the City has provided the remainder.

To permit expansion of the Airport the new Bayshore Freeway was routed west of the Bayshore Highway. When the State opened the Freeway for use, the Bayshore Highway within the Airport's boundaries was ceded to the City of San Francisco.

A paved parking area was set aside exclusively for personal aircraft use at the Airport. This new outdoor storage area is so located that personal aircraft have convenient access to runways and taxiways, but do not interfere with the tremendous commercial air traffic on the field.

In recognition of the services and facilities provided to private pilots, the Airport was awarded a Certificate of Merit with a rating of "Superior" by the Aircraft Owners and Pilots Association.

The Airport Department has aided in the development of a master "Airport Plan" for the Bay Area designed to coordinate airport needs, so that adequate facilities may be made available in the future at a minimum cost.

New developments at the Airport: The first series of radio programs from a Pacific Coast Air Terminal was undertaken. The Civil Aeronautics Administration plans to install a surveillance radar set at the Airport which will allow control tower operators to observe positions of aircraft within a thirty mile radius, another step toward all-weather airline operation. The work and staff of the

VOICES OF AUTHORITY

The Airport Control Tower directs all incoming and outgoing air traffic.
Tower directions, by radio, must be obeyed if humanly possible.

United States Weather Bureau at the Airport increased beyond the capacity of their former quarters so an addition to the Domestic Terminal Building was being constructed to provide necessary working space.

Although the San Francisco Airport serves San Mateo County in the same manner that it serves San Francisco, San Mateo County during the fiscal year imposed a property tax of $79,393.87 on the Airport. The City Attorney, acting on instructions from the Public Utilities Commission, has appealed this tax levy to the Appellate Court in the State of California, and the payment of the taxes to San Mateo County has been made under protest.

Last year for the first time, the services of professional fire fighters were available around the clock at the Airport. A San Francisco Fire Department company was stationed on the field providing the nucleus of the Airport's emergency force and a telephonic fire and emergency alarm system has been placed in operation so that any telephone on the Airport can be used to report emergencies to the Fire Department, Traffic Control Tower, and Emergency Alarm Center simultaneously.

An indication of the tremendous interest in today's aviation industry can be visualized from two occurrences during the past year. The Air Fair held at the San Francisco Airport on October 10 under the auspices of the San Francisco Junior Chamber of Commerce attracted more than 80,000 aviation minded citizens; they observed today's latest aircraft on static display and in aerial fly-overs. More than 10,000 people from San Francisco, the Peninsula, and the East Bay visited the U. S. Navy's 80-ton, 180 passenger Constitution when it was on public display at the San Francisco Airport for several days during May.

Progress of the Airport Expansion Program:

Construction work on the San Francisco Airport progressed steadily. The first new runway constructed with the 1945 Bond funds was placed in operation (6500' x 200'—it will handle traffic during storm wind conditions); a new outdoor storage area for private and itinerant aircraft was constructed on a nine acre site close to the Airport's Seaplane Harbor; a 160' x 80' loft building was moved in five sections from its former location near the United Airlines Maintenance Base and erected as a Post Office and Air Freight Building at its new site close to the northwest corner of the Domestic Terminal Aircraft Parking Apron; a new main entrance road from the Bayshore Freeway was opened; two passenger concourses were provided at the Domestic Terminal Building to protect passengers from inclement weather when walking to and from the 14 aircraft loading positions; an addition to the Domestic Terminal Building was being constructed to provide 2300 additional square feet of floor space to house the expanded activities of the United States Weather Bureau.

A detailed account of all Airport construction work will be found elsewhere in this report.

Airport Administration:

The Administration Division of the Airport Department is composed of B. M. Doolin, Manager, Airport Department, H. S. Messersmith, Superintendent of Airport Operations, and R. E. Smith, Assistant Superintendent of Airport Opera-

tions. The functions carried on by this division, in addition to supervising and coordinating the units within the Airport Department, are many and varied.

The responsibility for the activities of all airports under the jurisdiction of the Public Utilities Commission rests upon the shoulders of the Manager of the Airport Department. It is also his responsibility as representative of the Commission to confer and negotiate with airline and federal officials on the use of airport facilities; to arrange leases and rentals of airport property; to recommend designs, approve and supervise construction of airport improvements; to confer with the Civil Aeronautics Board regarding policies and future airport development.

The Superintendent of Airport Operations, acting as principal assistant to the Airport Manager, directs current operation and maintenance of the Airport; directs and assigns personnel; supervises and approves procedures under Civil Service, purchasing, and fiscal regulations; enforces rules and regulations; is responsible for the collection, custody and deposits of fees, rentals and other revenues; assigns hangar and other rentable space and supervises the correlation of Airport activities.

The Assistant Superintendent of Airport Operations assists the Superintendent of Airport Operations in directing operations and maintenance of the Airport, its facilities and services, coordinating work of the various airport divisions, enforces rules and regulations and performs other duties described under the preceding two paragraphs as assigned.

The clerical staff of the administrative office, under the supervision of Miss Ann Hoffman, Senior Clerk Stenographer, consists of one B-412 Senior Clerk-Stenographer, and two B-408 General Clerk-Stenographers.

Total personnel salary costs for the administrative division during the past twelve months amounted to $33,215.03.

Field Services Division:

Since the Airport is operated 24 hours a day, seven days a week, it is necessary that certain activities of the Airport Department be carried on continuously. These around-the-clock functions are grouped together in the Field Services Division.

Over-all supervision of these activities is the responsibility of Joseph Zunino, F-58, Supervisor of Airport Services, and assisting him are three F-52 Crew Chiefs: B. L. Smith, J. C. McElvenny, and W. Purcell. Each of these crew chiefs is responsible for the airport's ground facilities during his assigned tour of duty. Total personnel salary cost during the past fiscal year for these supervisory employees was $20,470.73.

Aircraft Fuel—Storage—Crash Crew:

The Airport Department acts as sole dealer in petroleum products for all aircraft on the airport, except those belonging to a federally certificated air carrier having a maintenance or operating base on the airport. The airport employees who engage in the refueling of aircraft are F-51 Airport Attendants of the Field Services Division. At the present time, the airport receives 7 cents per gallon of gasoline delivered on a cash or credit basis and 3 cents per gallon when deliveries are made on a contract basis. The difference is because contract deliveries are usually volume deliveries and require much less time per gallon delivered than

cash or credit sales. The airport's commission from dealership agreements with various petroleum companies amounted to $74,867.97 during the past fiscal year.

The airport is extensively used by many private and corporation aircraft, but handling such aircraft at a large air terminal such as San Francisco's presents a problem in that many of these aircraft fly at relatively slow speeds compared to large multi-engined planes. For this reason, it has been necessary to limit aircraft operation to those planes capable of maintaining a cruising speed of 120 miles an hour in the traffic pattern. Another safety requirement, necessitated by the heavy air traffic, is that all aircraft using the San Francisco Airport be equipped with two-way radios, making it possible for the CAA airport Traffic Control Tower to direct all air traffic in the vicinity of the field. The job of guiding these itinerant aircraft to the tie-down positions and of transporting crew members and passengers to the Domestic Terminal Building area is another responsibility of the airport attendants in the field services division. Income from outdoor aircraft storage during period covered by this report amounted to $9,883.38.

Another important function of these employees is to respond to all emergency alarms on the airport. These men, together with the airport fire department, form the first-line responding fire-crash force.

Security Detail:

The Airport Security Detail, composed of seven F-51 airport attendants under the direct supervision of an F-52 Crew Chief, operates 24 hours a day, seven days a week, performing three vital functions: protection of life and property, patrol of the entire airport, direction of vehicular traffic. This limited complement of personnel is used primarily to keep the flow of vehicular traffic fluid at both the airport's important terminal building areas. During the fiscal year some one million air passenger and one million visitors were accommodated in the Domestic and Trans-Pacific air terminal building, besides a daily average of 6,000 employees, all of which contribute to making the police functions of this group similar to the law enforcement problems to be found in any medium size community.

The men on the Security Detail are employees of the Airport Department and deputized as San Mateo County Deputy Sheriffs since the airport is located principally in San Mateo County unincorporated area. Cost of their salaries during the past year amounted to $26,560.08.

Communications Center:

Do you want to report a fire, have someone paged, send a telegram, ask about bus schedules, locate a lost article, or talk to the airport telephone operator? you can do all of this at one spot at the airport—the Communications Center.

This center has been operated continuously since its inception several years ago, although its duties and responsibilities have steadily broadened—the most recent addition being the operation of the emergency alarm system for the entire airport. This most important function takes precedence over all other activities of the Communications Center since it is vital to the safeguarding of lives and property on the airport. When operating the alarm system, the Communications Center employee must obtain the type and location of emergency from the person reporting it, so that the Fire Department will respond to the proper location with the proper equipment. Obtaining accurate information is no easy task when the reporting party may be panic stricken.

"FILL 'ER UP"
Airport crews service private planes. Act as dealers for various oil companies.

Passengers are advised of aircraft arrivals and departures over the airport public address system operated by the Communications Center. Charges for the use of this facility amounted to $15,442.83 during the past fiscal year.

If you return to the Communications Center after a time interval of a very few minutes, you may see the person who was previously operating the public address system busily engaged in accepting a telegram from a customer. The Communications Center also operates as a Western Union agency, for which the airport receives as commission 40 per cent of the gross revenue from the telegrams, amounting to $12,312.99 during the past year.

The public information service, the telephone switchboard and the lost and found department for the airport are all located at this central point and operated by airport employees.

Four B-454 telephone operators and six B-512 general clerk-typists under the direct supervision of T. R. Karpus, Senior Clerk, operate the Communications Center at a total salary cost of $33,408.97.

Custodial Services:

Would it be an easy job to keep your home neat and presentable if you entertained 4,500 guests during each 24 hour day without any interruption in their arrivals and departures? A task very similar to this, except that the area is

TERMINAL ACTIVITY
People arrive at and leave airport terminal in buses, limousines, taxis and private cars.

much larger than any home, falls upon the shoulders of the airport's janitorial staff. This function is a continuous one operating around the clock all days of the week and a minimum of one janitor and one janitress is on duty at all times. These men and women, under the direction of Silvestro Sarzotti, C-108 working foreman janitor, daily clean and polish both the Domestic Terminal Building and the Trans-Pacific Terminal Building from basement to attic. Most of this daily face lifting is accomplished at those hours when passenger traffic is at a minimum and business offices are not in use. This staff includes one C-107 working foreman janitor, seven C-102 janitors, four C-104 janitresses; their salaries during the past fiscal year amounted to $38,781.30.

Maintenance Division:

The job of maintaining a 1868 acre establishment representing an investment of more than $40,000,000.00; containing miles of pavement under constant pounding from the impact of up to 70 ton airplanes; keeping up numerous large buildings which serve 4500 passengers daily is a staggering one. This tremendous job of preventative maintenance rests on the shoulders of the airport's Maintenance Division. It is its responsibility to insure that possible trouble spots are checked periodically so that small repairs will forestall the need for costly ones later on. This necessitates developing a detailed schedule of inspections in order that no item may be overlooked. These inspections may vary in time from daily to an-

nually. The division has found itself handicapped by not having skilled craftsmen among its permanent complement of employees, making it necessary to requisition such services from other city departments; thus many projects which could be handled immediately must await arrival of skilled help.

This division is responsible for the maintenance of miles of runways, paved taxiways, upkeep of terminal building areas and maintenance bases, painting, runway lighting, roadways, parking areas, electrical power distribution system, sewerage system, drainage system, pumping plants, tide gates, mechanized and emergency equipment and aircraft storage areas. It is also responsible for maintaining both the Domestic Terminal Building and the Trans-Pacific Terminal Building. The Domestic Terminal Building constructed in 1936 and designed to accommodate a maximum of 1700 people daily is now forced to accommodate 4500 passengers daily and the strain of this heavy traffic places a severe load on the maintenance division to keep the building in safe condition. This division also operates the airport supply storeroom.

The Maintenance Division is under the direct supervision of M. B. Sweet, F-50 Maintenance Chief, and includes one F-52 crew chief, eight F-51 airport attendants, and one O-52 gardener. Total salary cost of this division during the past fiscal year, excluding payment for the services of skilled craftsmen from other city departments, amounted to $51,125.85.

Accounting Division:

Airport Management is big business these days, a far cry from the cow pasture, barnstorming era of yesteryear. One of the most important aids to the efficient operation of any large business is an accurate accounting system supplying up-to-the-minute financial data.

The San Francisco Airport Department's Accounting Division is responsible for maintaining the airport's accounts with its tenants, computing bills for utility services, aircraft storage, petroleum product deliveries, airline operational charges, public address system charges, charges for rent of airport properties, telephone system charges, electric energy distribution charges and the airport's percentage of gross receipts from various revenue producing concession activities. It maintains financial records showing allocation of funds for specific functions and reports the amount of each appropriation used and the balance remaining at monthly intervals. The Accounting Division handles receipt of moneys in payment of airport charges and deposits them with the Treasurer of the City and County of San Francisco. This division also prepares and forwards time rolls and personnel actions for the Airport Department.

The Accounting Division is under the direct supervision of H. J. Pachtner, B-10 accountant, and its personnel includes one B-6 senior bookkeeper, two B-4 bookkeepers, one B-408 general clerk stenographer, one B-222 general clerk and one B-512 general clerk typist. This unit operates on a forty-hour work week and is open for business between 8:00 A.M. and 5:00 P.M. Mondays through Fridays. Cost of personnel salaries in this division for the past fiscal year amounted to $24,194.62.

BIGGEST BOMBER
The Air Force's B-36 was on public display at the 1948 Air Fair.

Fire Department:

The airport management was successful in obtaining professional personnel to man the airport's emergency equipment when a company of the San Francisco Fire Department was stationed at the airport in February 1949. Since then the airport has had trained experienced firemen on duty seven days a week, 24 hours a day. The airport company includes Captain Roy Mow, who is the Airport Fire Marshal, three lieutenants, and 9 firemen, a total of 13 men. This complement is considered the absolute minimum of professional firemen necessary for the proper safeguarding of lives and properties on the airport and serves as a nucleus for such additional forces as the Airport Department field service employees, the crash crew from the United States Coast Guard Air Station on the airport and the auxiliary brigades of Pan American and United Air Lines.

An integrated emergency alarm system was developed at the airport as a result of conferences between the Fire Department, airport management and Pacific Telephone and Telegraph Company. This system relies on the telephone as the basic method of reporting emergencies, since at the present time it is the one means of communication readily accessible to all personnel. Every telephone on the airport displays a bright red and white "decal" showing how to report an emergency. This merely requires lifting the receiver off the hook and dialing a code number which in turn sets the entire airport emergency alarm procedure in

TANK FARM
Airlines and oil companies maintain huge gasoline storage tanks to supply the voracious appetites of the big airliners.

operation. A central alarm receiving station is installed at the airport's com munication center. All incoming alarms are answered at this nerve center an monitored by the Civil Aeronautics Administration Airport Traffic Control Towe and the Airport Fire Department.

The Fire Department and the airport each provide certain equipment, the Fir Department has supplied the structural fire fighting equipment and the Airpor has furnished the specialized aircraft crash equipment. Personnel costs are in cluded in the Airport Department budget under "Services of Other Departments and are transferred to the Fire Department for payment of personnel. Cost o this activity amounted to $15,901.00 between February and June of 1949.

Civil Aeronautics Administration Traffic Control Tower:

One of the fascinating and essential activities at the San Francisco Airpor is that carried on by the Civil Aeronautics Administration Airport Traffic Contro Tower. By means of radio and visual communication, the traffic controllers in th tower direct and are responsible for all aircraft traffic within the San Francisc Airport Control Zone. The tower is operated around the clock, seven days a week to maintain expeditious, orderly, and safe flow of air traffic which converges upo the airport. The tower assists pilots during clear weather by providing informa tion concerning wind direction and velocity, runway in use, altimeter setting an

IN CASE OF FIRE
Airport now has its own fire department.

ime, taxiing instructions and takeoff clearances. During inclement weather, the ower has all the foregoing duties plus maintaining separation between arriving nd departing aircraft. When poor weather exists, aircraft approaching the air- ort from all parts of the country are placed in a "holding stack." This "stack" s in the immediate vicinity of the airport and is a "parking place" in the air for ircraft that must await their turn to land. It is the tower's responsibility to eep these aircraft separated and to advise the pilot of each aircraft when to descend to lower altitude and when to start his approach to the airport.

The Civil Aeronautics Administration Traffic Control Tower has a complement of 14 employees under the direction of E. P. Sullivan, Chief Traffic Controller, and its annual payroll amounts to approximately $53,000.

Civil Aeronautics Administration Overseas Foreign and Domestic Aeronautical Communications Stations:

The Civil Aeronautics Administration Aeronautical Communications Stations at the San Francisco Airport perform an aviation function similar to a nerve system, relaying vital information from aeronautical agencies to aircraft in flight or other points in the United States.

Each month approximately 700 flights over the Pacific ocean are furnished communications by the Overseas Foreign Aeronautical Communications Stations

TOO LITTLE OR TOO BIG?
Either the Stratocruiser is too big for the hangar or vice versa. Stratocruiser has two decks.

at the San Francisco Airport. This station covers the area between the Pacific coast and Hawaii, maintaining a constant radio contact with all aircraft within the area. This section also collects meteorological information from the entire Pacific area including Asia and disseminates this data throughout the continental United States over various teletype networks.

The Domestic Airway Communications Station performs a similar function for all aircraft in flight over land within the station area.

As the Civil Aeronautics Administration organization is a federal agency under the Department of Commerce, all its facilities are maintained and furnished the general public, the private pilot and the scheduled airlines without discrimination. At present, the communications stations at the San Francisco Airport operate around the clock seven days a week, employing 61 people at an annual average payroll of $260,000.00 under the direction of E. C. Butler, Chief Communicator.

United States Weather Bureau Stations, San Francisco Airport:

The largest Weather Bureau Station west of Chicago is at the San Francisco Airport and when additional floor space has been provided its staff and activities will further increase. It is anticipated that the necessary additional space will be ready for occupancy by September of 1949.

STATION OF HOPE
The Coast Guard Station at the airport handles all rescues of aircraft down at sea in this area.

The Air Commerce Act of 1926 and the Civil Aeronautics Act of 1938 specifically delegated the responsibility of furnishing meteorological service for air navigation to the Weather Bureau. The Weather Bureau was created by Congress in 1880 and its responsibilities in the science of meteorology have been steadily extended until now its services are of tremendous value to every kind of business and profession in all modern fields of endeavor besides general agriculture, commercial, industrial and transportation interests.

The Weather Bureau station at the San Francisco Airport, under the direction of E. M. Vernon, Official in Charge, is divided into various units, some of which are described here:

The Observation Section makes two or more weather observations every hour using the latest technical devices for obtaining information quickly and precisely; flashes these reports over the CAA teletype net to all points on the national weather network and also to the airlines operating from the San Francisco Airport.

Domestic Airway Forecast Unit makes an aviation weather forecast every six hours covering northern and central California and Nevada, including trip forecasts along the various airways and terminal forecasts for many cities. They also furnish weather information to commercial and itinerant pilots through personal contact and maintain close liaison with personnel of the domestic airlines operating from this airport.

International Aviation Forecast Service is the main center for weather map analysis and flight forecasts of trans-oceanic routes between San Francisco Airport and various overseas points and prepares flight folders containing charts and maps of existing and expected weather conditions over the northern Pacific Ocean.

Flight Advisory Weather Service keeps pilots in flight posted on the latest weather development and expected changes, works in close cooperation with the Civil Aeronautics Administration Air Traffic Control Section.

District Forecast Unit prepares general weather forecast covering all sections of northern and central California and Nevada and disseminates it through the newspapers, radio stations, wire press services and Civil Aeronautics Administration teletype facilities on the national weather network. It also issues rain warnings for the California fruit-drying areas, frost warnings for agricultural interests and storm warnings and advisories for marine commerce and fishing industry.

Fire-Weather Unit keeps a close watch on the meteorological conditions favorable for creating a fire hazard in forest areas during the drier summer months of the year, issues daily forecasts and bulletins to the United States Forest Service, and dispatches forecasts to aid in the control of fires raging in the forest areas.

Weather Communications and Editing Unit is the clearing house for all weather data received from the Pacific and redistributed to various cities in North America having need for the information.

United States Coast Guard:

Any disaster occurring in Trans-Pacific commercial flying would be acted upon by the United States Coast Guard with all the resources at its command. The Coast Guard Air Station at the San Francisco Airport is responsible for the area from the Oregon-California boundary to Santa Maria, California, and half way to the Hawaiian Islands. This area is patrolled by means of especially equipped B-17 Flying Fortresses, which carry droppable life boats, and Martin PBM Mariners. The station also has a helicopter available for local operations and a twin engine C-47 to transport the helicopter to more remote locations from which it can be flown to scenes of disaster under its own power. In addition to strictly rescue activities, the station is charged with assistance in carrying out many other duties required of the Coast Guard by law, such as locating disabled and overdue craft, checking aids to navigation and transporting medical cases from ship to shore.

SAN FRANCISCO AIRPORT
AIRCRAFT MOVEMENTS

	AIR CARRIER			ITINERANT			LOCAL			TOTAL		
	1947-48	1948-49	% Increase Decrease	1947-48	1948-49	% Increase Decrease	1947-48	1948-49	% Increase Decrease	1947-48	1948-49	% Increase Decrease
July	6,043	6,500	7.5	4,044	2,160	—46.5	4,542	2,966	—34.4	14,629	11,626	—20.5
August	6,716	6,589	1.9	4,143	2,147	—48.2	4,681	3,086	—34.0	15,540	11,822	—23.9
September	6,410	6,775	5.7	3,487	2,287	—34.4	3,932	2,964	—24.6	13,829	12,026	—13.0
October	6,517	6,871	5.4	2,712	1,976	—27.1	3,910	2,822	—27.8	13,139	11,669	—11.2
November	5,803	6,313	8.7	1,887	2,022	7.1	2,616	2,319	—11.3	10,306	10,654	3.4
December	6,834	5,781	—15.4	1,805	1,414	—21.6	2,879	1,830	—36.4	11,518	9,025	—21.6
January	6,526	5,582	—14.4	1,983	1,475	—25.6	2,532	2,145	—15.2	11,041	9,202	—16.6
February	5,646	5,672	0.5	1,986	1,393	—29.9	2,420	2,347	—3.0	10,052	9,412	—6.4
March	5,992	5,696	—4.9	1,581	1,643	3.9	3,654	2,878	—21.2	11,227	10,217	—9.0
April	6,110	6,110	...	1,661	2,147	29.2	2,902	2,953	1.7	10,673	11,210	5.0
May	6,552	6,689	2.0	2,213	2,177	—1.6	3,272	2,687	—17.9	12,037	11,553	—4.0
June	6,272	7,504	19.6	1,738	2,374	36.6	2,527	2,659	5.2	10,537	12,537	19.0
Total	75,421	76,082	0.9	29,240	23,215	—20.6	39,867	31,656	—20.6	144,528	130,953	—9.4

— Denotes decrease

SAN FRANCISCO AIRPORT
DOMESTIC AND INTERNATIONAL AIR CARRIER OPERATIONS
REVENUE PASSENGER ACTIVITIES

	Revenue Passengers In and Out		Percentage Increase	Revenue Passengers On and Off		Percentage Increase
	1947-1948	1948-1949	Decrease	1947-1948	1948-1949	Decrease
July	98,244	95,438	—3.0	88,844	84,788	—4.6
August	115,918	102,137	—11.9	100,676	91,435	—9.2
September	102,700	98,553	—4.0	93,367	88,075	—5.7
October	96,139	88,551	—7.9	85,295	79,152	—7.2
November	76,073	80,332	5.6	67,013	72,105	7.6
December	77,121	87,895	14.0	65,017	77,651	19.4
January	65,462	72,687	11.0	55,332	65,257	18.9
February	68,621	69,852	1.8	53,878	64,225	19.2
March	75,696	80,750	6.7	63,377	73,413	15.8
April	80,137	89,164	11.3	68,463	80,780	18.0
May	90,188	101,149	12.1	77,989	91,624	17.5
June	98,202	111,433	13.5	87,346	101,607	16.3
Total	1,044,501	1,077,941	3.2	906,597	970,112	7.0

SAN FRANCISCO AIRPORT
DOMESTIC AND INTERNATIONAL AIR CARRIER OPERATIONS
AIR MAIL AND AIR EXPRESS-FREIGHT

	Pounds of Air Mail		Percentage Increase	Pounds of Air Express-Freight		Percentage Increase
	1947-48	1948-1949	Decrease	1947-1948	1948-1949	Decrease
July	937,223	1,001,612	6.9	672,436	2,094,224	211.4
August	902,083	1,023,997	11.3	784,108	2,092,499	166.9
September	842,221	1,071,844	27.3	740,857	2,304,198	211.0
October	914,407	1,208,456	32.1	893,297	2,699,211	202.2
November	937,112	1,242,230	32.5	725,662	2,553,704	183.0
December	1,441,719	1,965,839	36.3	831,602	2,892,820	247.9
January	988,018	1,230,662	24.5	1,422,114	2,160,064	51.9
February	975,988	1,141,928	17.0	1,521,506	2,553,943	67.8
March	1,140,951	1,249,666	9.5	1,814,703	3,018,736	66.3
April	1,054,567	1,217,349	15.4	1,503,504	3,001,957	99.7
May	1,046,256	1,226,338	17.2	1,870,117	2,539,610	35.8
June	1,019,100	1,226,075	20.3	2,296,306	2,527,040	11.3
Total	12,199,645	14,805,996	21.4	15,076,172	30,137,039	99.9

— Minus denotes decrease.

SAN FRANCISCO AIRPORT
EXHIBIT "A"
CONSOLIDATED BALANCE SHEET
June 30, 1949

ASSETS		
Fixed Capital:		
In Service	$20,473,228.05	
Less Reserve for Depreciation	3,405,968.45	
	$17,067,259.60	
Under Construction	11,075.32	
Total Fixed Capital		$17,078,334.92
Cash:		
Operating Fund	$184,666.20	
Reconstruction and Replacement	43,902.31	
1938 Bond Fund	5,022.88	
1945 Bond Interest Fund	2,625.00	
1945 Bond Redemption	150,000.00	
Revolving Fund	2,500.00	
Cash in Transit	61.75	
Total Cash		388,778.14
Accounts Receivable:		
Miscellaneous Debtors	$75,152.76	
Bureau of Delinquent Revenue	6,549.78	
Total Accounts Receivable	$81,702.54	
Less Reserve for Doubtful Debts	8,939.30	
Net Accounts Receivable		72,763.24
Interfund Accounts (Schedule No. 5):		
Due from Public Service Enterprises	$1,283.56	
Due from General City and County	3,329.22	
Total Inter Fund Receivables		4,612.78
Deferred Charges:		
Material and Supplies	$4,592.50	
Postage Stamps	450.00	
Outstanding Encumbrances (Contra)	31,840.23	
Prepaid Insurance	11,482.83	
Damage Claims (Contra)	1,894.00	
Work in Progress	*1,081.51*	
Advance to Employees	23.70	
Total Deferred Charges		49,201.75
Total Assets and Deferred Charges		$17,593,690.83

LIABILITIES		
1945 Bonds Matured		$150,000.00
Bond Interest Payable:		
1945 Bond Interest Accrued—Not Due	$15,833.34	
1945 Bond Interest Matured	2,625.00	
Total Bond Interest Payable		18,458.34
Accounts Payable:		
Warrants Outstanding	$15,167.63	
Work Orders Not Billed	1,934.73	
General Creditors	2,724.34	
Payroll Deductions	2,144.65	
Outstanding Encumbrances (Contra)	31,840.23	
Total Accounts Payable		53,811.58
Interfund Accounts (Schedule No. 4):		
Due to Public Service Enterprises	$51,879.09	
Due to General City and County	133,028.36	
Total Interfund Payables		184,907.45
Deferred Credits:		
Telegraph Agency Cash Receipts	$3,042.93	
Petroleum Agency Cash Receipts	495.88	
Locker Agency Cash Receipts	70.05	
Reserve for Damage Claims (Contra)	1,894.00	
Rentals Paid in Advance	31,190.36	
Suspense Credits	60.66	
Guarantee Deposits	2,700.00	
Coin Lock Agency Cash Receipts	55.20	
Rentals Billed in Advance	86.67	
Total Deferred Credits		39,595.75
Surplus:		
Detail Schedule Attached (Exhibit "C")		17,146,917.71
Total Liabilities and Surplus		$17,593,690.83

Italic figures denote loss and deficiency.

SAN FRANCISCO AIRPORT
EXHIBIT "A"
1945 BOND FUND BALANCE SHEET
June 30, 1949

ASSETS		
Fixed Capital:		
In Service	$12,207,937.21	
Under Construction	317,181.25	
Total Fixed Capital		$12,525,118.46
Cash:		
1945 Bond Fund	$1,034,481.29	
Real Property Fund	450.00	
Total Cash		1,034,931.29
Intra Fund Accounts:		
Federal Airport Project		4,406,817.95
Deferred Charges:		
Outstanding Encumbrances (contra)		500,725.99
Total Assets		$18,467,593.69

LIABILITIES		
Bonded Debt:		
1945 Airport Bonds Due December 15, 1946 to December 15, 1956	$17,500,000.00	
Less Bonds Matured	3,650,000.00	
Bonds Outstanding		$13,850,000.00
Accounts Payable:		
Contract Payments Due	$10,025.32	
Contract Payments Withheld	2,881.46	
General Creditors	746.95	
Outstanding Encumbrances (contra)	500,725.99	
Total Accounts Payable		514,379.72
Intra Fund Accounts:		
Airport Operating		234.75
Interfund Accounts:		
Hetch Hetchy Water Supply	$79,249.71	
Water Department	752.53	
1947 Hetch Hetchy Bond Fund	39,184.74	
Purchasing Department	1,758.20	
Total Interfund Accounts Payable		120,945.18
Deferred Credits:		
Unamortized Bond Premium		6,128.82
Surplus:		
Contributions from Operating Fund:		
Bond Redemption	$3,650,000.00	
Bond Interest Capitalized	323,612.05	
Bond Premium Amortized	2,509.83	
	$3,976,121.88	
Less:		
Loss on Inventory Writeoff	$163.23	
Loss on Sale of Land	53.43	216.66
Net Surplus		3,975,905.22
Total Liabilities and Surplus		$18,467,593.69

SAN FRANCISCO AIRPORT
EXHIBIT "A"

FEDERAL AIRPORT PROJECT
BALANCE SHEET

June 30, 1949

ASSETS		LIABILITIES		
Fixed Capital:		Intra Fund Accounts:		
Under Construction	$2,996,565.28	1945 Airport Bond Fund	$4,406,817.95	
Cash	3,373,878.56	Airport Operating	721.42	
Accounts Receivable:				
Federal Grants	1,230,368.79	Total Intra Fund Accounts		$4,407,539.37
Deferred Charges:		Accounts Payable:		
Outstanding Encumbrances (Contra)	1,316,295.79	Contract Payment Due	$552,261.10	
		Contract Payments Withheld	288,406.16	
Total Assets	$8,917,108.42	Outstanding Encumbrances (Contra)	1,316,295.79	
		Total Accounts Payable		2,156,963.05
		Surplus:		
		Contributions from Federal Agencies		2,352,606.00
		Total Liabilities and Surplus		$8,917,108.42

SAN FRANCISCO AIRPORT
EXHIBIT "B"
COMPARATIVE STATEMENT OF REVENUES AND EXPENSES
Twelve Months Ended June 30, 1949

		June 30, 1949	June 30, 1948
	OPERATING REVENUES:		
	Air Carrier Flight Operations:		
6701-A	Scheduled Air Carriers	$114,318.05	$97,513.47
6701-B	Certified Scheduled Feeder Air Carriers	5,701.66	4,387.37
6701-C	Non-Scheduled Air Carriers	10,081.38	16,757.42
	Total Flight Operations	$130,101.09	$118,658.26
	RENTALS:		
6702-A	Public Address System	$15,442.83	$8,211.23
6703-A	Aircraft Outdoor Storage	9,883.38	11,643.09
6703-B	Airport Property Unimproved	20,926.72	14,914.78
6703-C	Airport Property Paved Area	17,856.30	17,113.11
6703-D	Hangar, Hangar Office and Hangar Shop, Entire Hangar as a Unit	23,964.96	17,901.41
6703-E	Partial Hangar, Hangar Office and Hangar Shop	1,392.29	1,509.17
6703-F	Passenger Terminal Building Office Space	11,147.93	9,504.85
6703-G	Passenger Terminal Building other than Office Space	38,948.76	37,589.05
6703-H	Other Buildings, Structures and Improvements	9,875.00	11,497.99
6703-I	Tank Farm Area	9,796.29	7,250.24
6704-A	Bulk Petroleum Deliveries to Tank Farm Area	4,572.85	3,127.69
6704-B	Pipe Line Licenses	300.00	300.00
	Total Rentals	$164,107.31	$140,562.61
	COMMISSIONS ON PERMITS OUTSIDE PASSENGER TERMINAL BUILDING:		
6705-A	Taxicabs and Limousines	$27,039.00	$30,864.22
	COMMISSIONS ON AGENCIES:		
6706-A	Telegraph	$12,312.99	$16,703.68
6706-B	Petroleum Products	74,867.97	48,167.16
6706-C	Lockers	766.80	872.19
6706-D	Coin Lockers	1,637.61	.....
	Total Commissions	$89,585.37	$65,743.03
	Total Operating Revenues	$410,832.77	$355,828.12

		June 30, 1949	June 30, 1948
	OPERATING EXPENSES:		
	Salaries and Wages:		
	Administrative	$12,000.00	$10,000.08
	Maintenance	5,904.00	5,256.00
	Operative	260,340.15	216,210.37
	Total Salaries	$278,244.15	$231,466.45
	OPERATING COSTS:		
7201	Travel Expense and Local Fares	$10,898.73	$12,007.69
7202	Freight, Express and Drayage	89.54	222.82
7203	Use of Employees' Cars—Mileage Only	956.83	1,557.57
7205	Storage and Care of Vehicles	213.15	77.35
7218	Maintenance and Care of Office Equipment (Operating)	127.76	1,392.07
7219	Maintenance and Repairs—Other Equip. (Operating)	.....	87.90
7231	Gas and Electricity	11,424.09	9,766.49
7232	Telephone and Telegraph	9,456.35	6,293.40
7233	Postage	456.75	168.95
7234	Printing, Advertising, etc.	1,042.25	991.49
7235	Subscriptions to Newspapers and Periodicals	390.33	533.45
7238	Contractual, Janitorial and Window Washing Services.	734.00	981.00
7269	Professional and Special Services	6,953.74	9,064.43
7298	Miscellaneous Contractual Services	1,352.59	2,150.93
7300	Operating Material and Supplies	10,178.66	8,307.43
7301	Warehouse Expense—Clearing	3.06	.02
7321	Gasoline and Oil Shortage from Petroleum Agency	156.32	.....
7330	Fire Department Expense	16,028.74	.....
	Total Operating Costs	$70,462.89	$53,602.99
	MAINTENANCE COSTS:		
8220	Maintenance of Landing Area	$4,400.17	$4,091.26
8221	Maintenance of Runways	2,366.66	2,578.34
8222	Maintenance of Field Lighting Equipment	2,907.31	3,427.08
8223	Maintenance of Radio Equipment	1,240.35	720.46
8224	Maintenance of Hangars	266.23	743.78
8225	Maintenance of Administration Building	3,912.85	2,875.48
8226	Maintenance of Other Buildings	3,382.61	10,856.96
8227	Maintenance of Automotive Equipment	*1,761.24*	1,118.49
8227-2	Automotive Transportation—Miscellaneous	502.56	3,489.99
8228	Maintenance of Other Equipment—Shop, Field, etc.	2,457.67	4,016.77
8229	Maintenance of Parking Areas, Roads, Walks, Fences, etc.	10,143.42	4,787.37
8230	Maintenance of Power Distribution System	4,693.25	4,580.06
	Total Maintenance Costs	$34,511.84	$43,286.04

Italic figures denote loss and deficiency.

			June 30, 1949		June 30, 1948
	FIXED CHARGES:				
9801	Accident Compensation—Employees		$314.84		$262.81
9813	Automobile Insurance		.....		809.75
9815	Other Insurance		11,791.90		5,551.05
9860	Pensions and Retirement Allowance		28,831.84		20,301.56
9870	Taxes		80,497.58		34,788.56
9925	Depreciation	$639,175.57		$435,027.67	
9926	Depreciation Expense Adjustment	77.89	639,253.46	—125.25	434,902.42
9930	Bad Accounts		4,800.00		4,800.00
	Total Fixed Charges		$765,489.62		$501,416.15
	Total Operating Expenses		$1,148,708.50		$829,771.63
	Operating Loss		$737,875.73		$473,943.51
	OTHER INCOME:				
6707-R	Income from Re-sale of Electric Energy	$134,838.91		$100,919.53	
6707-X	Less Cost of Electric Energy Sold	105,383.53		76,577.81	
		$29,455.38		$24,341.72	
6708-A	Rental of Land for Purposes not Associated with Aviation	2,400.00		2,397.20	
6708-B	Reimbursement of Taxes Paid	4,629.96		4,781.09	
6708-C	Reimbursement of Telephone Extension Charges	2,613.02		1,093.65	
6708-D	Cash Discounts	28.48		75.60	
6708-E	Miscellaneous	757.80		1,437.53	
6708-F	Reimbursement of Natural Gas Charges	10.56		612.88	
6709	Non-cash Revenues	10,090.66	49,985.86	4,655.37	39,395.04
			$687,889.87		$434,548.47
	OTHER EXPENSES:				
9830	Airport Bond Interest Expense	$108,470.12		$29,822.37	
	Less Bond Premium Amortized	2,079.58	106,390.54	518.69	29,303.68
	Net Loss for Twelve Months		$794,280.41		$463,852.15

EXHIBIT "C"

CONSOLIDATED SURPLUS ACCOUNT
For Twelve Months' Period Ending June 30, 1949

Balance—June 30, 1948—After Adjustments		$15,804,096.10
Add:		
Contributions from Taxes—Direct (Budget)	$303,956.11	
Contributions from Taxes—Capital Improvement Fund (Budget)	2,328,713.89	
Contributions from Taxes—Emergency Reserve	26,700.00	
Miscellaneous Additions	3,453,930.56	
Total Additions		6,113,300.56
		$21,917,396.66
Deduct:		
Loss for Twelve Months' Period Ending June 30, 1949	$794,280.41	
Contributions to 1945 Bond Fund	3,976,121.88	
Inventory Writeoffs	76.66	
Total Deductions		4,770,478.95
Balance—June 30, 1949		$17,146,917.71

SAN FRANCISCO AIRPORT
SCHEDULE No. 1
FIXED CAPITAL AND DEPRECIATION
1948-1949

		Balance June 30, 1948	Additions July 1, 1948 June 30, 1949	Retirements July 1, 1948 June 30, 1949	Adjustments July 1, 1948 June 30, 1949	Balance June 30, 1949	Accrued Depreciation June 30, 1949	Depreciation for 1949-1950
I	LAND	$1,630,884.57	$7,456.60	.....	.....	$1,638,341.17	.....	.....
II-1	LAND PLANE PORT—LANDING AREA							
	(a) Land Reclamation and Improvement	$12,742,472.48	$106,870.13	.....	*$513,086.20*	$12,336,256.41	$298,066.46	$31,898.02
	(b) Field Drainage	409,591.92	54,508.26	.....	166,567.93	630,668.11	115,509.69	21,365.12
	(c) Drainage Control	141,033.23	12,544.27	.....	2,748.07	156,325.57	82,076.51	10,497.21
	(d) Runways, Taxiways and Aprons	2,907,106.97	156,974.75	.....	312,423.85	3,376,505.57	592,844.56	120,000.46
	(e) Landing Field Lighting and Marking	213,804.79	12,768.69	.....	25,676.59	252,250.07	97,878.62	15,233.72
	Total Landing Area	$16,414,009.39	$343,666.10	.....	*$5,669.76*	$16,752,005.73	$1,186,375.84	$198,994.53
II-2	LAND PLANE PORT: UTILITIES, ROADS AND PARKING AREAS:							
	(a) Roads, Walks, Parking Areas, Fences and Appurtenant Drainage	$1,491,993.03	$14,402.54	.....	.....	$1,506,395.57	$111,808.60	$69,303.64
	(b) Water Supply System	45,404.40	103,937.27	.....	.....	149,341.67	18,656.21	4,625.07
	(c) Sewage System	32,704.99	22,913.57	.....	5,669.76	61,288.32	8,158.97	2,008.84
	(d) Power Supply System and Street Lighting	93,527.79	53,577.35	*105.00*	.....	147,000.14	24,914.22	4,522.19
	(e) Telephone System (Outside of Buildings)	4,441.00	1,546.71	.....	.....	5,987.71	1,776.18	199.54
	(f) Gas Supply System	1,621.03	.....	*.03*	.....	1,621.00	764.30	81.05
	(g) Bridges and Culverts	184,450.14	811.27	.....	.....	185,261.41	10,240.84	4,061.56
	(h) Landscaping	15,166.00	.....	.....	.....	15,166.00	5,463.92	589.82
	(i) Miscellaneous	18,711.12	.....	.....	.....	18,711.12	8,740.37	1,648.92
	(j) Gasoline Line and Storage	107,134.00	197.27	.....	.....	107,331.27	2,142.66	363.68
	Total Utilities, Roads & Parking Areas	$1,995,153.50	$197,385.98	*$105.03*	$5,669.76	$2,198,104.21	$192,666.27	$87,404.31

II-3 a-v	LAND PLANE PORT BUILDINGS	$4,155,749.01	$3,529,057.39	.....	*$1,467.86*	$7,683,338.54	$1,030,406.77	$195,207.53
II-4	LAND PORT—EQUIPMENT:							
	(a) Office Furniture and Appliances	$19,910.74	$3,582.33	*$622.80*	$1,289.64	$24,159.91	$12,627.18	$1,250.83
	(b) Shop Tools and Building Maintenance	2,729.33	595.70	*392.05*	.....	2,932.98	1,177.60	257.73
	(c) Fire Fighting Equipment	28,142.48	.....	.....	.....	28,142.48	20,417.02	2,153.80
	(d) Motor Driven Equipment	40,820.13	71,748.50	*198.28*	.....	112,370.35	33,026.47	9,651.64
	(e) Meteorological Equipment	4,210.03	.....	.....	.....	4,210.03	3,565.11	148.94
	(f) Drainage Pumphouse Equipment	8,000.80	700.00	.....	.....	8,700.80	3,913.68	443.16
	(g) Sewerage Pumphouse Equipment	2,901.03	49,238.21	.....	.....	52,139.24	1,108.10	1,578.47
	(h) Other Equipment	2,392.57	19,559.61	.....	.....	21,952.18	1,731.13	1,720.80
	(i) Radio Equipment	24.495.86	831.87	.....	.....	25,327.73	17,170.69	797.65
	Total Equipment	$133,602.97	$146,256.22	*$1,213.13*	$1,289.64	$279,935.70	$94,736.98	$18,003.02
III	SEAPLANE PORT:							
	(l) Land Reclamation and Improvement	$698,837.91	.....	.....	.....	$698,837.91	$14,760.79	$1,215.40
	(d) Utilities	7,787.00	.....	.....	.....	7,787.00	2,336.42	259.57
	Total Seaplane Port	$706,624.91	.....	.....	.....	$706,624.91	$17,097.21	$1,474.97
	UNITED STATES NAVY GRANT	$3,422,815.00	.....	.....	.....	$3,422,815.00	$884,685.38	$142,496.19
	Grand Totals	$28,458,839.35	$4,223,822.29	*$1,318.16*	*$178.22*	$32,681,165.26	$3,405,968.45	$643,580.55

Italic figures denote loss and deficiency.

POTRERO TROLLEY COACH YARD

This new yard for servicing and storage is of the most modern design. It will accommodate 250 trolley coaches. It was completed July 1, 1949

MUNICIPAL RAILWAY OF SAN FRANCISCO

WILLIAM H. SCOTT

General Manager

WM. H. SCOTT
General Manager, Municipal Railway

The fiscal year ended June 30, 1949, marked the completion of thirty-six and one-half years of continuous operation of the Municipal Railway, the last four and three-quarter years being consolidated operation with the acquired properties purchased from the Market Street Railway Company on September 29, 1944.

After the sweeping transit changes made under the conversion on July 3, 1949, as well as the conversions made previously, the Municipal Railway system presented a vastly changed and improved type of transit system from that existing some twenty months previous on November 4, 1947, when the electorate approved the $20,000,000 Rehabilitation Bonds, the $22,850,000 Street Improvement Bonds, the $2,000,000 Market Street Railway Refinancing Bonds, and the $5,000,000 Off Street Parking Bonds.

Conversion Improvements:

On the many lines that have been converted from street car operation to motor coach or trolley coach operation the headways have been shortened about 50 per cent, and the increased vehicle frequency has resulted in a great saving in waiting time to the riders of these lines. Another great improvement is the increased seating provided, which amounts to a 75 per cent increase during peak periods.

The new street surfaces on Fillmore, Hayes, Haight, McAllister, Market, Kearny, Polk, Sacramento, Clay, Washington, Jackson, and the Embarcadero, where the old street car tracks have been removed, in addition to vastly improving these thoroughfares in appearance, have resulted in greatly reduced vehicle operating noises and have afforded smoother coach riding to the railway patrons as well as to those operating private motor vehicles. The inner tracks on Market Street from Geary Street to Castro Street have now been entirely replaced with a new roadbed and rails.

Of the 497 motor coaches and 248 trolley coaches operated, the major number of vehicles are new and of the most modern type. The new trolley coaches now operating on the railway routes with the steepest grades have clearly demonstrated their ability to climb these grades fully loaded with ease and facility. One grade operated on the Union Street line is an 18.9 per cent grade.

With the aid of the recently acquired mechanical coach washing facilities at the Potrero, Ocean, and Twenty-fourth Street divisions, and the enforcement of the no smoking ordinance in the coaches, all motor and trolley coaches are being maintained in a clean and sanitary condition, both as to exteriors and interiors.

As the railway patrons have become acquainted with the newly designated coach stops, the advantages of curb loading have become increasingly apparent.

New Street Cars—Price Increase Modernization of Old Cars:

In July, 1948, the railway called for bids on 40 to 60 new type P. C. C. street cars, the only bid received being in the amount of $38,924 each. After adding use tax, this would amount to $40,092 per car. This compares with the price of $27,518 each paid for the last 10 new cars purchased which were received in August, 1948.

As the price quoted for the new street cars was deemed excessive, it was decided to reject the bid received and to use the funds intended for the purchase of the new street cars, for the modernization of 55 of the originally owned Municipal Railway street cars, the purchase of 50 additional motor coaches, and for additional facilities at the Ocean motor coach division.

The modernization of the 55 street cars includes the installation of new safety doors and step mechanisms, a complete check and overhaul of bodies and electrical equipment, and the repair or replacement of worn or defective parts as required. A complete job of repainting inside and outside is likewise being done. About 35 cars have been completed and placed in operation as of August 31, 1949.

Of the 15 new P. C. C. type cars owned, 10 were received in August, 1948.

New 48-Passenger Trolley Coaches on Order:

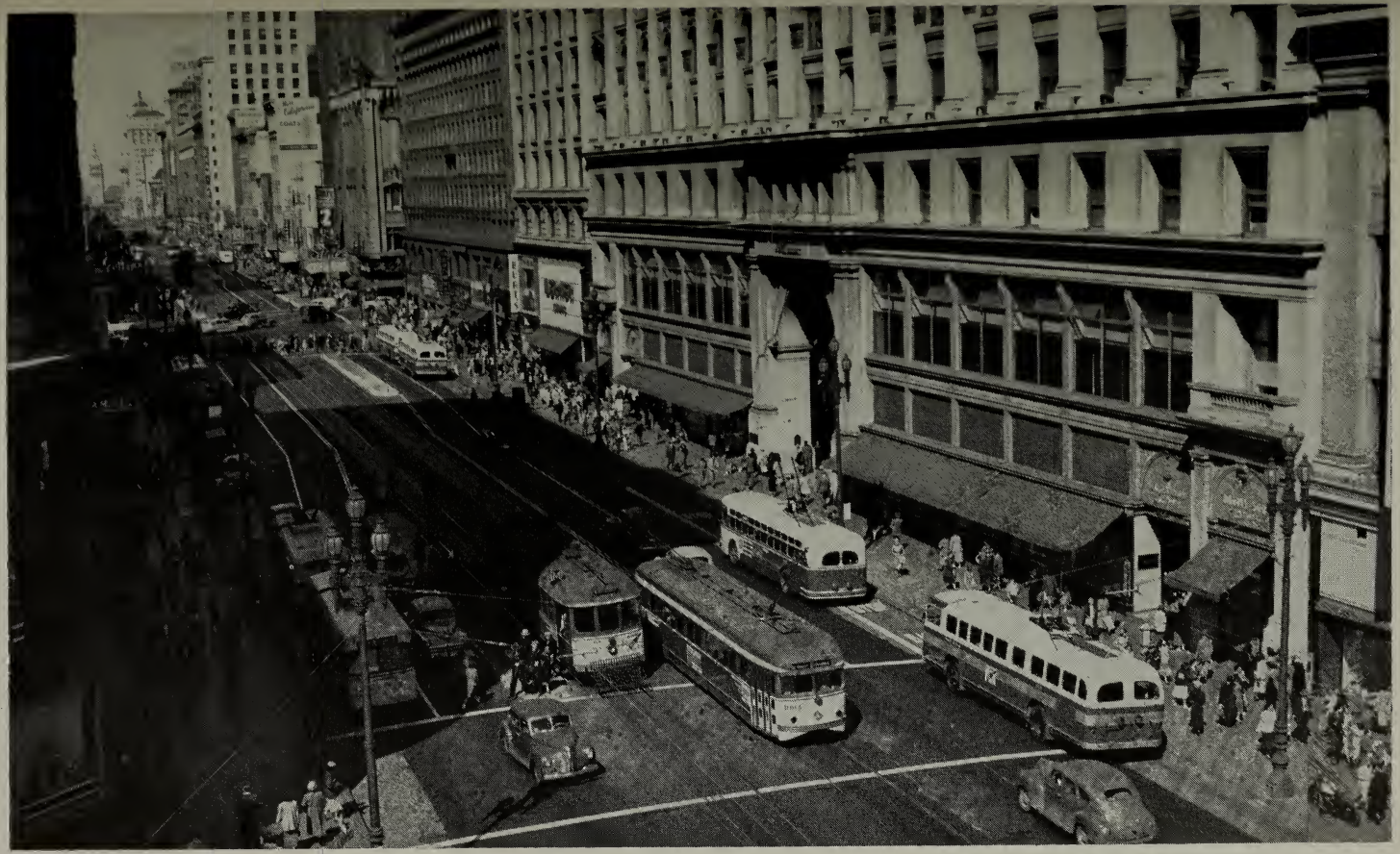
On August 10, 1949, the railway prepared a requisition for 50 additional new 48-passenger trolley coaches which, upon delivery, will bring the trolley coach fleet to 298 in number.

Transportation Changes, Service Improvements:

The changes made on July 3, 1949, constituted one of the largest single day transit conversions in transit history, involving 14 lines and 146 miles of routes.

The numbers 1, 2, and 3 Sutter Street lines and the number 31 Balboa line were converted from street car operation to motor coach operation, the number 8 Market Street street car line was converted to trolley coach operation, and the outer end of the "H" street car line was changed to motor coach operation. Also on July 3, 1949, the motor coach lines numbers 5 McAllister, 6 Haight-Masonic, 7 Haight-Stanyan, and 21 Hayes were converted from motor coach operation to trolley coach operation. Extensions and reroutings were made on the motor coach lines numbers 20 Ellis, 25 Bryant, and 55 Sacramento.

Effective July 3, a partial express service was established on the Market Street street car lines, "J," "K," "L," "M" and "N" when all stops west of Twelfth Street were eliminated with the exception of Duboce Avenue, Church Street, and Castro Street.



TROLLEY COACHES OFFER CONVENIENT CURB LOADING ON BUSY MARKET STREET

BEFORE
Junk was formerly stored at this yard at Ocean Avenue and San Jose Avenue.

AFTER

Now Ocean Yard is modern service and storage yard for motor coaches.

UP AND DOWN
Trolley coaches take the City's hills in stride.

Other Conversions and Changes:

Other major conversions and changes in the railway system have been made as noted below:

On October 6, 1946, the Sunset Express service was inaugurated providing rapid motor coach service from the Sunset district to the downtown district, resulting in a saving of from 10 to 15 minutes in travelling time between terminals.

On October 7, 1946, on the Third and Kearny line, all street car operation was discontinued and replaced by motor coach operation, with express area, morning and evening peaks, from Third and Revere to Third and Mission streets.

On December 5, 1946, line "H" was extended from the old terminal at Potrero Avenue and Army Street to Third Street and San Bruno Avenue.

On December 8, 1946, the old Haight Street division of the acquired Market Street Railway Company was abandoned on account of the bad physical condition of the building, and the lines operating from this division transferred to the McAllister, Geary, and Sutro divisions.

On June 9, 1946, street car operation on street car line "E" was discontinued, and conversion to trolley coach operation was begun. Complete conversion to trolley coach operation on line "E" and consolidation with old trolley coach line

"R" was effected on July 20, 1947, operating from Lyon and Greenwich streets to Army and South Van Ness Avenue.

In January, 1947, two new facilities were inaugurated designed to speed up schedules and to control and improve service. One is a two-way radio installation with transmitter located on Twin Peaks. This installation provides contact with two-way radio equipped automobiles. Central Control operated with radio station KCRJ and 29 mobile units. A radio receiver with a fixed frequency tuned to police radio station KGPD has also been installed, enabling operators of Central Control to be informed of fires and accidents which may affect the car lines or coach routes of the railway.

The other new facility is a headway recorder system, electrically recording headways. Both installations are operated from a central control at the Geary Street car house.

On September 8, 1947, the construction of tracks across Market Street from Stockton Street to Fourth Street was completed, and line "F" commenced operating through service from Scott and Chestnut streets to the Southern Pacific depot to render more adequate transportation into the factory and commercial district south of Market Street and to augment the commuter service between the Southern Pacific depot and Market Street.

On June 7, 1948, the No. 5 McAllister and the No. 21 Hayes street car lines were replaced by motor coaches. Minimum vehicle headways were reduced from 5 minutes to 2½ minutes on the No. 5 McAllister line and from 4 minutes to 2¼ minutes on the No. 21 Hayes Street line, resulting in a decided improvement in service on these lines.

Since June 7, 1948, the old McAllister Street division has been used as a motor coach division, and coach pits, gasoline-dispensing equipment and paving installed. The old building has been removed with the exception of a small portion used for operating offices.

On July 4, 1948, the No. 6 Haight-Masonic and the No. 7 Haight-Ocean street car lines were converted to motor coach operation, resulting in a reduction in minimum vehicle headways from 8 minutes to 5 minutes on the No. 6 line and from 4 minutes to 2½ minutes on the No. 7 line.

On August 1, 1948, the No. 22 Fillmore, the No. 25 Bryant-San Bruno, and the No. 4 Sutter-Sacramento street car lines were wholly converted to motor coach operation, and the No. 3 Sutter-Jackson was partially converted to motor coach operation.

Minimum vehicle headways were reduced from 3⅓ minutes to 2½ minutes on the No. 22 Fillmore line. On the No. 3 Sutter-Jackson line, the motor coach replacement was partial, motor coaches operating from Polk and Sutter streets to Presidio Avenue and California with express service from Fillmore to Van Ness. Street cars continued operation from Sutter and Fillmore to the bridge terminal. On the No. 4 Sutter-Sacramento line, street cars were entirely discontinued, and motor coaches operated from Seventh Avenue and Fulton Street to Polk and Sutter, with an express area between Fillmore and Van Ness.

As of August 1, 1948, on account of the conversion of the No. 22 and No. 25 lines to motor coach operation, the old Fillmore car house was closed.

On January 16, 1949, the No. 22 Fillmore motor coach line was converted to trolley coach operation, operating out of the newly designated Potrero trolley coach division from which street cars were transferred to the Geary and Geneva

MOST MODERN
Ten new "streamliners" have joined the fleet.

divisions. Trolley coach lines No. 33 - 18th Street and "E" - Union-Howard (renumbered trolley coach line No. 41 on February 1, 1949) also were operated from the Potrero trolley coach division.

On January 16, 1949, the Mission Street street car lines No. 9, No. 11 and No. 14 were converted to motor coach operation. Express service was inaugurated on January 17, 1949, on the No. 14 Mission line in the morning and evening peak periods from Richland Avenue and Mission Street to Eleventh and Mission streets via Guerrero Street.

On January 16, 1949, the No. 40 San Mateo street car line was abandoned, the last day of operation being January 15, 1949.

On January 17, 1949, express service was inaugurated on the No. 26 Guerrero-Daly City motor coach line in the morning and evening peak periods from San Jose and Bernal avenues to South Van Ness and Otis Street.

Market Street Service Improvement:

After the conversion changes made on July 3, 1949, on Market Street, street cars operated only on the inner tracks to the bridge terminal, and trolley coaches operated to the ferry terminal with curb loading.

Street car skip-stops on Market Street inaugurated on July 26, 1948, were increased in the area west of Twelfth with stops only at Duboce Avenue, Church Street, and Castro Street.

The removal of the outer tracks, including certain unneeded loading islands, and the new street surface laid have also aided in the improvement of transit service.

Another factor in the improvement of service and the traffic flow is the no-stopping, no-parking regulations in effect on Market Street, as well as on other streets in the downtown area, under penalty of having cars towed away with assessment of fees for towing and garaging, plus a fine for illegal parking.

Contemplated Conversions:

Present plans contemplate the following additional conversion changes to those already made:

March 5, 1950

No. 9 Mission line—Motor coach to trolley coach.
Letter "C" California line—Street car to motor coach.

September 3, 1950

Nos. 3 and 4 Sutter lines—Motor coach to trolley coach.
Line "C" California—Motor coach to trolley coach.
Line "H" Van Ness-Potrero—Street car to motor coach.
Line "D" Van Ness-Union—To be abandoned.

April 1, 1951

Line "H" Van Ness-Potrero—Motor coach to trolley coach.

To the extent that the present bond funds are available, other expenditures for improved surface transit and facilities will be made as conditions warrant.

With the completion of expenditures from the $20,000,000 rehabilitation bond fund and the completion of the track removal program being financed from the $22,850,000 street improvement bond fund, the railway will have made great strides toward its goal of the most modern surface transit system possible.

There will still remain the question of what rapid transit program utilizing subways or freeways will be approved in connection with the several plans which have been submitted to date.

Bond Sales:

Of the $20,000,000 bond issue for the railway rehabilitation and modernization, a block of $6,500,000 has been sold, bearing date of February 1, 1948, a block of $4,900,000 bearing date of August 1, 1948, and a block of $3,500,000 bearing date of March 1, 1949. The redemption dates on these bonds run annually to March 1, 1964.

The expenditure of funds and the payments for redemption and interest on this bond issue are being assumed by the Municipal Railway.

It is to be noted on the statement following that, while a total of $14,900,000 bonds has been sold, appropriations in the amount of $17,464,422 have been made, causing an excess of $2,564,422 in appropriations over actual bond sales. Although these funds have been appropriated, they may not be expended for any specific function until more bonds, sufficient to cover such expenditures, are sold.

$20,000,000 Rehabilitation Modernization Bonds
Appropriations of $17,464,422 of Above Issue:

As of June 30, 1949, this fund shows:

Expenditures		$10,886,615.85
Encumbrances		1,137,943.65
Unencumbered Allotments	$1,128,816.98	
Unallotted Portion of Series "C"	1,746,623.52	
Funds Appropriated for Which Bonds Have Not Been Sold	2,564,422.00	5,439,862.50
Total Appropriated		$17,464,422.00

The appropriated amounts provide for the following:

Equipment		
259—44-Passenger Motor Coaches	$4,153,272.10	
290—44-Passenger Trolley Coaches	5,651,852.14	
343—Fare Box Motors, 53 Mechanized and 15 Manual Fare Boxes	40,052.68	
Spare Motor Coach Engines and Transmissions	26,565.90	
Spare Trolley Coach Control	1,532.18	
Modernization of 55 Existing Street Cars	116,054.50	$9,989,329.50
Carhouses, Garages and Equipment		
Ocean Bus Yard Including Equipment	$811,385.92	
Geary Carhouse and Presidio Bus Yard	698,532.05	
Garage, Carhouse and Shop Equipment	158,830.00	
McAllister Street Bus Yard	14,430.36	
Potrero Carhouse and Mariposa Yard	697,820.96	
Central Shops	1,490,000.00	
Geary Offices	140,000.00	
Kirkland Yard	253,000.00	
West Portal Substation	105,000.00	
Waiting Stations at Various Locations	6,900.00	4,375,899.29
Trolley Coach Overhead Construction		
Fillmore Street Line	$207,424.59	
McAllister and Hayes Street Lines	345,988.27	
Haight-Masonic and Haight-Sunset Lines	515,728.68	
Market Street Operation	199,852.26	
Mission Street Operation	267,000.00	
Overhead Construction at Potrero Carhouse and Mariposa Yard	153,089.42	
Underground Duct Line Eleventh Street	30,000.00	
Miscellaneous	1,520.67	$1,720,603.89
Track Reconstruction and Removals		
Replacement of Inner Tracks on Market Street	$257,633.82	
Removal of Outer Tracks on Market Street	159,479.42	
Removal of Tracks on Mission Street	457,000.00	
Mason and Broadway Reconstruction	30,000.00	
Miscellaneous Locations	100,067.00	1,004,180.24
Cable Car Turntable		
Reconstruction of Turntable at Powell and Market streets		20,000.00
Contingencies		
Includes Preliminary Expenses, Legal Expenses, and Office Plans and Specifications		66,865.37
Materials and Supplies		287,543.71
Total Amount Appropriated as of June 30, 1949		$17,464,422.00

IT WORKS!
First of new trolley coaches took officials on test run down Market Street.

As of July 3, 1949, from bond fund monies, 259 forty-four passenger motor coaches have been received and placed in operation on the following lines where street car operation has been discontinued:

No. 1	Sutter-California
No. 2	Sutter-Clement
No. 3	Sutter-Jackson
No. 4	Sutter-Divisadero
No. 9	Mission-Richland
No. 11	Hoffman Avenue
No. 14	Mission Street
No. 25	Bryant-Bayshore
No. 31	Turk-Balboa

The new Ocean garage construction, which is now completed, was placed in partial operation on August 1, 1948. This modern installation now provides for the efficient servicing and storage of approximately 250 motor coaches, serving some 23 routes.

To relieve the congestion in the vicinity of the Twenty-fourth and Utah streets bus garage, plans are now being formulated toward the establishment of a new motor coach service and storage facility known as "Kirkland Bus Yard," to be located at North Point and Stockton Streets.

WILL GO ANYWHERE
Motor coaches are adaptable for many routes.

SAFETY ISLAND
Passengers board street cars on Market Street from special loading zone.

As of July 3, 1949, from bond fund monies, 190 forty-four passenger trolley coaches have been received and placed in operation on the following lines where street car or motor coach operation has been discontinued:

No. 5 McAllister
No. 6 Haight-Masonic
No. 7 Haight-Ocean
No. 8 Market-Castro
No. 21 Hayes
No. 22 Fillmore

The Potrero car house and Mariposa yard have now been wholly converted to trolley coach operation. This facility houses and services the present fleet of 248 trolley coaches serving 8 routes.

The construction of a new Presidio trolley coach terminal, adjoining the present Geary Street car house, is in the course of construction. Contracts covering the excavation, paving, and the building of a retaining wall have been practically completed. The reconstruction of the north end of the Geary Street car house, to provide for trolley coaches, has been started and is scheduled to be completed during February, 1950. The land required for this terminal, with a capacity of 155 trolley coaches, was purchased out of bond fund monies at a cost of $98,000.

During the fiscal year 1948-49, the outer tracks on Market Street, from Geary to Valencia streets, were removed. The Municipal Railway's proportion of the expense of this removal amounted to approximately $159,000. The total cost of this work amounts to $317,000, the difference, or $158,000, being financed from the street improvement bond fund.

Tracks on Mission Street from the Embarcadero to Excelsior Avenue are now in the process of being removed. The amount of $320,000 of bond fund monies has been provided as the Municipal Railway's portion of this track removal and repaving work, the total cost of the work being estimated at $800,000.

Track Removals from Street Improvement Fund:

Fifty-six (56) miles of single track have been removed, and the street repaved on the following streets:

Polk Street, Post Street to North Point Street.
Kearny Street, Market Street to Broadway.
Sansome Street, Bush Street to Chestnut Street.
Columbus Avenue, Montgomery Street to Stockton Street.
Sacramento Street, The Embarcadero to Fillmore Street.
Clay Street, The Embarcadero to Larkin Street.
Larkin Street, Sacramento Street to Clay Street.
Washington Street, The Embarcadero to Kearny Street.
Jackson Street, The Embarcadero to Columbus Avenue.
The Embarcadero, The Ferry to Jackson and Howard Street to Mission Street.
Howard Street, Steuart Street to The Embarcadero.
Steuart Street, Howard Street to Folsom Street.
Folsom Street, Steuart Street to Third Street.
Sixth Street, Mission Street to Bryant Street.
Fillmore Street, Duboce Avenue to Broadway.
Church Street, Duboce Avenue to Fourteenth Street.

Sixteenth Street, Church Street to Kansas Street.
Kansas Street, Sixteenth Street to Seventeenth Street.
Seventeenth Street, Kansas Street to Connecticut Street.
Connecticut Street, Seventeenth Street to Eighteenth Street.
Eighteenth Street, Connecticut Street to Third Street.
Eighteenth Street, Castro Street to Market Street.
Monterey Boulevard, Diamond Street to Gennessee Street.
McAllister Street, Market Street to Central Avenue.
Fulton Street, Masonic Avenue to LaPlaya.
LaPlaya, Fulton Street to Balboa Street.
Haight Street, Market Street to Stanyan Street.
Stanyan Street, Hayes Street to Fulton Street.
Hayes Street, Market Street to Stanyan Street.
Masonic Avenue, Oak Street to Frederick Street.
Frederick Street, Masonic Avenue to Clayton Street.
Clayton Street, Frederick Street to Carl Street.
Carl Street, Clayton Street to Sunset Tunnel.
Stanyan Street, Carl Street to Parnassus Avenue.
Parnassus Avenue, Stanyan Street to Fifth Avenue.
Judah Street, Fifth Avenue to Ninth Avenue.
Ninth Avenue, Judah Street to Pacheco Street.
Twentieth Avenue, Lincoln Way to Wawona Street.
Wawona Street, Nineteenth Avenue to Twentieth Avenue.
Market Street (Outer Tracks Only), Geary Street to Valencia Street.

The cost of the removal of the tracks from the above locations amounted to $3,050,956, provided from the Street Improvement Bond Fund monies, plus $159,000 from the Municipal Railway Bond Fund monies, the latter figure being the railway's share of the removal of the outer tracks on Market Street, the total cost amounting to $3,209,956.

These figures do not include the removal of tracks and repaving of Mission Street from The Embarcadero to Excelsior Avenue, this project having just started.

Decrease in Operated Electric Street Car Trackage:

As of June 30, 1945, the consolidated railway system was operating 263.08 miles of electric street car single trackage. On July 3, 1949, the operated electric street car trackage totaled 80.00, a reduction of 183 miles of which approximately 56 miles have been removed and the balance being in the course of removal.

Change from Street Car to Motor and Trolley Coach Operation:

To illustrate the change taking place from street car to coach operation, the following statement has been prepared, comparing the miles and hours operated in the month of July, 1949, with the month of July, 1947, two years prior:

HUNDREDS OF CITIZENS VISITED RAILWAY SHOPS AT "OPEN HOUSE" IN MAY

MUNICIPAL RAILWAY OF SAN FRANCISCO
COMPARATIVE STATEMENT OF MILES AND HOURS OPERATED
July, 1949, and July, 1947

	July 1949		July 1947		
	Miles	Percent of Total	Miles	Percent of Total	Increase *Decrease*
Miles Operated:					
Electric Street Cars	606,715	22.56	1,399,662	55.98	*792,947*
Cable Street Cars	36,361	1.35	37,901	1.52	*1,540*
Motor Coaches	1,513,955	56.31	956,400	38.25	557,555
Trolley Coaches	531,860	19.78	106,396	4.25	425,464
System Total	2,688,891	100.00	2,500,359	100.00	188,532
Hours Operated:					
Electric Street Cars	69,784	23.18	157,714	58.67	*87,930*
Cable Street Cars	6,838	2.27	7,184	2.67	*346*
Motor Coaches	160,554	53.34	92,166	34.29	68,388
Trolley Coaches	63,853	21.21	11,737	4.37	52,116
System Total	301,029	100.00	263,801	100.00	32,228

Plant and Equipment Expenditures from Municipal Railway Funds Other Than Bond Funds:

Exclusive of amounts expended from the 1947 Bond Fund, since the date of consolidation, September 29, 1944, to June 30, 1949, the Municipal Railway has also expended in excess of $5,000,000 from the railway reconstruction and replacement fund and operating fund for new street cars, motor coaches, trolley coaches, new construction, and replacements of plant and equipment. Of this amount, $688,751.58 was received from the Market Street Railway Impounded Excess Fare Monies. Some of the major items are detailed below:

Motor Coaches—137 Motor Coaches (121 New, 16 Used) $1,759,033
In addition to these, 259 motor coaches were received which were purchased from the 1947 Bond Fund at a cost of $4,153,852.

Trolley Coaches—36 New Trolley Coaches 719,878
In addition to these, 190 trolley coaches were received which were purchased from the 1947 Bond Fund at a cost of $3,683,675.

Street Cars—10 New Street Cars 278,730

Replacement Job No. 1410—Removal of the 4 tracks on Market Street between Valencia and Castro streets, replacing the inner tracks and repaving the outer track area. Work completed October, 1945. Total Cost 317,402

Replacement Job No. 1575-M—Reconstruction of Mission Street tracks between Otis and Thirteenth streets. Work completed November, 1945. Total Cost 41,801

Replacement Job No. 1607—Reconstruction of tracks on Church Street from Twenty-fifth to Twenty-seventh, and from Market Street to Seventeenth Street including branchoff at Twenty-fourth and Church streets; outer tracks on Church Street from Market Street to Sixteenth Street removed and surface area repaved. Work completed October, 1946. Total cost 156,722

Italic figures denote loss and deficiency.

Extension and Betterment Job No. 283—Track reconstruction—extending tracks from Potrero Avenue to Bayshore Boulevard. Work completed December, 1946. Total cost 28,694

Extension and Betterment Jobs No. 272 and 273—Purchase and installation of a two-way radio system and a headway recorder system. In operation in January, 1947. Total cost 50,649

Replacement Job No. 1646-M—Reconstruction of inner tracks on Market Street from Fremont Street to Eddy Street. Work completed May, 1947. Total cost 206,276

Replacement Job No. 1646M-3—Reconstruction of inner tracks on Market Street from Eddy Street to Valencia Street. Work completed July, 1948. Total Operating Fund cost 67,775
In addition to this, Bond Fund monies were spent in this reconstruction at a cost of $258,915.

Replacement Job No. 1566-M—Old office building at Turk and Webster streets was replaced by a new office building. The Geneva Avenue office building was remodeled, and other miscellaneous replacements were made in railway buildings. Work performed at various dates to June 30, 1947. Total cost 71,158

Replacement Job No. 1520 and Extension and Betterment Jobs No. 251 and No. 280—Construction in connection with the conversion of electric street car line "E" to trolley coach operation, including cost of 16 trolley coaches. Complete trolley coach operation in July, 1947.

Cost of Construction	$171,781
Cost of Trolley Coaches	255,607
Total cost	427,388

Extension and Betterment Job No. 275—Additions to Geary Street car house offices, including new central money receiving room. Completed in May, 1948. Total cost 146,995

Land Purchases—Assessor's block No. 19—bounded by Beach, North Point, Stockton and Powell streets. Being used as a material storage yard. Purchased May, 1947. Total cost 184,123

Parcel of land adjacent to Geary Street car house fronting on Presidio Avenue and on Euclid Street. Purchased May, 1946. Total cost 49,707

Extension and Betterment Job No. 260—Construction of tracks across Market Street from Stockton Street to Fourth Street. Work completed September, 1947. Total cost 88,423

Replacement Job No. 1769—Replacement and relocation of tracks and overhead facilities on Geary Street from Broderick to Masonic Avenue. Work complete but cost incomplete as of June 30, 1949. Total estimated cost 174,250

Replacement Jobs—Twenty-fourth Street Motor Coach Garage—Nos. 1547-M, 1548-M, 1563-M, 1666-M, 1735-M, 1738-M, 1801-M, E and B Job 284. Under the above job numbers, expenditures were made for improvements and replacements at the motor coach garage at Twenty-fourth and Utah streets, including improved ventilation, enlarged stores facilities and offices, electric hoists, material chutes, twin post hydraulic coach lifts, modern fuel dispensing equipment, floor area paving, work pit facilities, bench illumination, and the addition of many items of repair tools and equipment. Work performed at various dates to June 30, 1948. Total cost 119,995

Replacement Jobs Nos. 1650 and 1657-M—Six new coin counting machines (3 delivered and 3 on order). Total estimated cost..... 20,857

Miscellaneous Other Capital Expenditures—During the period September 29, 1944, to June 30, 1949, various other capital expenditures were made from railway funds other than bond funds for garage, shop, and office equipment, automotive service equipment, building improvements, and reconstruction, miscellaneous track, paving, and overhead reconstruction, and replacement. Total amount expended, estimated..... 600,000

In addition to the foregoing itemization of capital expenditures, for plant and equipment and new construction, totaling over $5,000,000 paid from railway earnings, there was also paid from earnings the amount of $5,618,601 to the Market Street Railway Company on the $7,500,000 purchase price, the balance being from the 1947 Refinancing Bond Fund. Normal operating expenses for repairs and maintenance to plant and equipment are additional to these figures.

Plant and Equipment Purchased and Placed in Service December 28, 1912, to June 30, 1949, Sources of Funds:

Since the start of operations on December 28, 1912, plant and equipment placed in service, based on historical cost, totaled $59,423,751. The total amount expended for this plant and equipment by the railway was $34,023,732, the difference, or $25,400,019, being the appraised historical cost of the purchased Market Street Railway plant and equipment of $32,678,720, less the amount paid, $7,278,701. The difference between the $7,500,000 paid the Market Street Railway Company and $7,278,701, or $221,299, is the value of materials and supplies purchased.

Of the amount of $34,023,732, representing the total amount expended by the railway for plant and equipment, the amount of $19,274,980 was provided from earnings of the railway, $4,741,705 from taxes, contributions, and other sources, and $10,007,047 from unredeemed bond issues.

Plant and equipment retired from December 28, 1912, to June 30, 1949, based on historical cost, totals $15,342,307, leaving plant and equipment on hand and in use, based on historical cost, as of June 30, 1949, in the amount of $44,081,444.

A detailed statement follows:

PLANT AND EQUIPMENT PURCHASED AND PLACED IN SERVICE DECEMBER 28, 1912, TO JUNE 30, 1949

SOURCES OF FUNDS

	Total	Paid From Earnings	Contributions, Taxes, and Other Sources	1947 Refinancing Bond Fund Unpaid	1947 Rehabilitation Bond Fund Unpaid	1910-1913 Bond Fund Unpaid
From 1910-1913 Bond Fund	$ 5,481,000	$ 5,081,000	.....	.....	.....	$400,000
From Contributions, Taxes and Other Sources	4,207,705	.....	$4,207,705	.....	.....	.....
From Market St. Railway Purchase (Paid For)	7,278,701	5,618,601	100,000	$1,560,100	.....	.....
From 1947 Rehabilitation Bond Fund	8,480,947	.....	434,000	.....	$8,046,947	.....
From Earnings	8,575,379	8,575,379	.....	.....	.....	.....
Total Plant and Equipment Purchased	$34,023,732	$19,274,980	$4,741,705	$1,560,100	$8,046,947	$400,000
From Market St. Railway Purchase Not Paid for $32,678,720—7,278,701	25,400,019					
	$59,423,751					

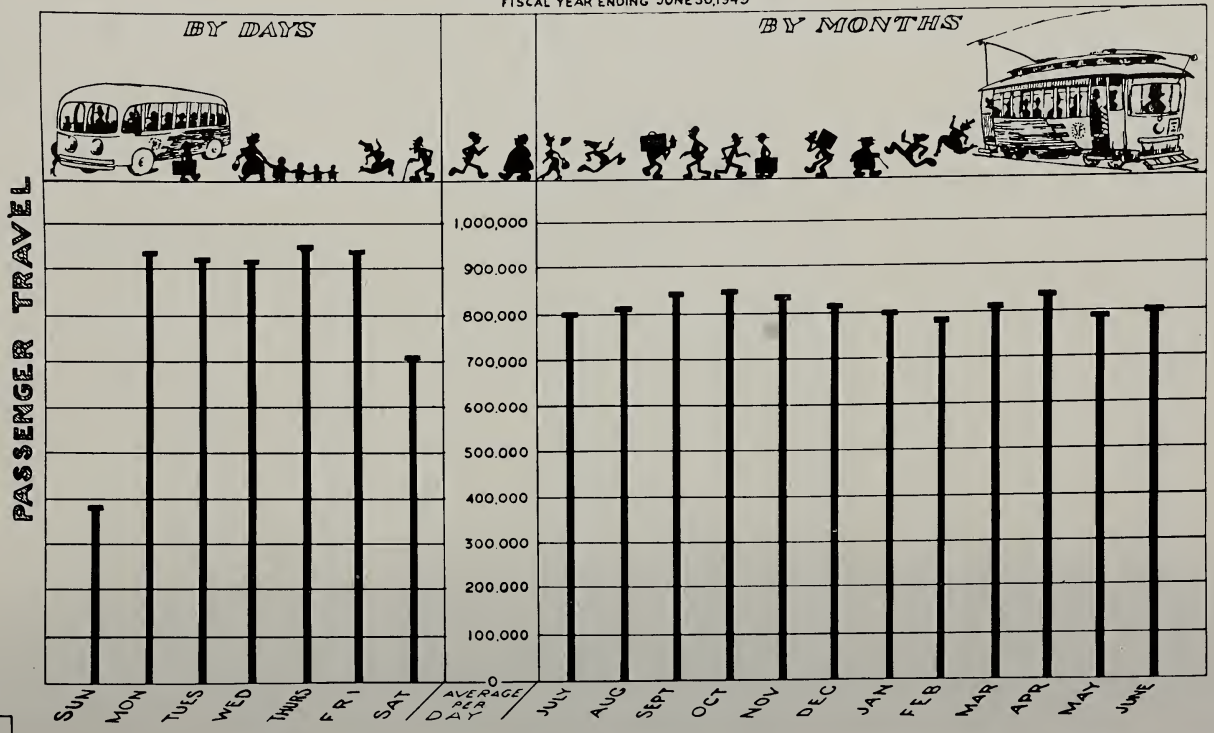
Total Plant and Equipment	$59,423,751
Plant and Equipment Retired to June 30, 1949	15,342,307
Plant and Equipment on Hand and in Use June 30, 1949	$44,081,444

Note: The above figures include only the amount of $8,480,947 from the $20,000,000 1947 Rehabilitation Bond Fund representing the value of plant transferred and placed in service to June 30, 1949.

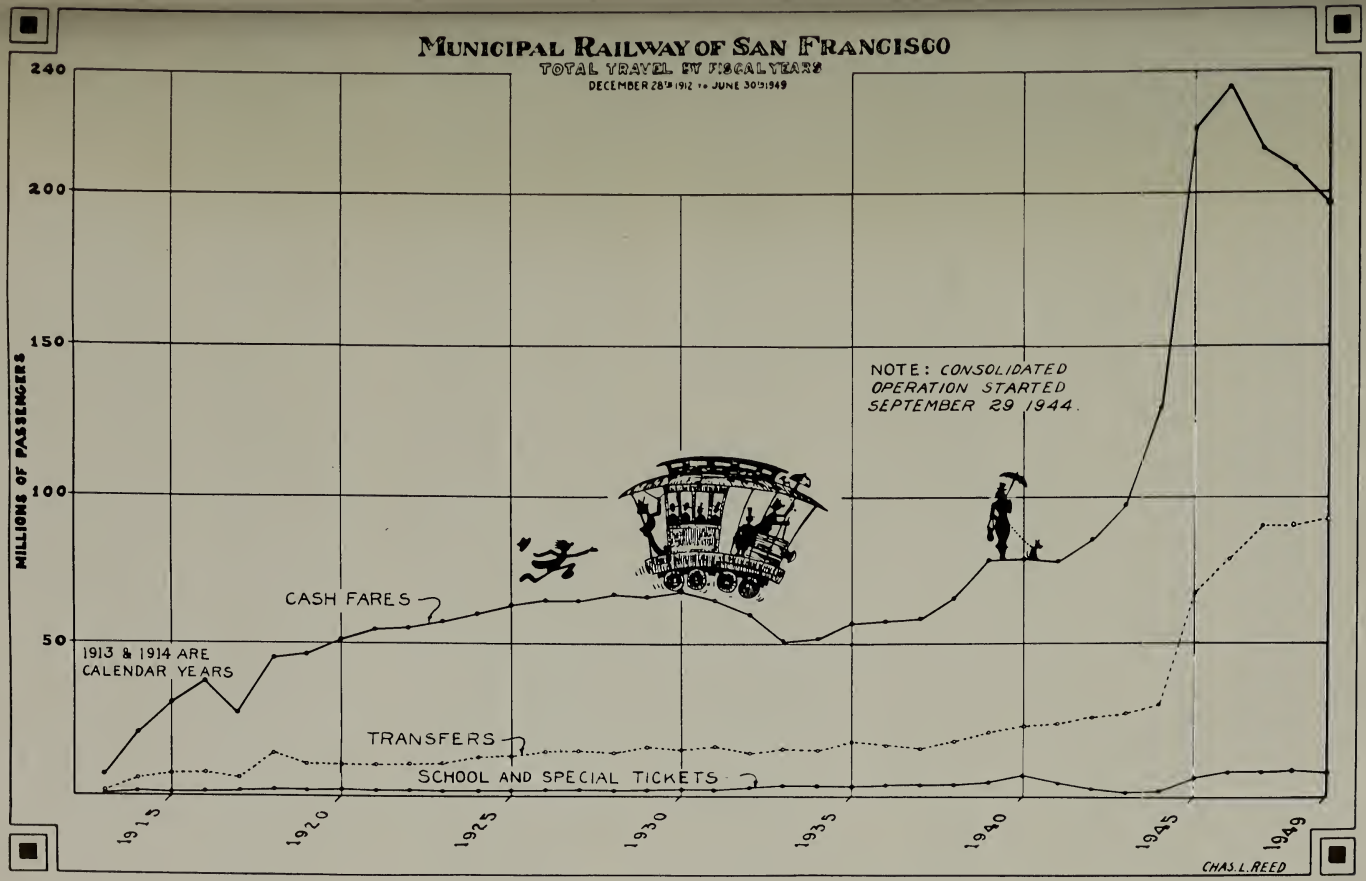
MUNICIPAL RAILWAY OF SAN FRANCISCO

Average Daily Travel

FISCAL YEAR ENDING JUNE 30, 1949



CHAS. L. REED


MUNICIPAL RAILWAY OF SAN FRANCISCO
TOTAL TRAVEL BY FISCAL YEARS
DECEMBER 28TH 1912 TO JUNE 30TH 1949
MILLIONS OF PASSENGERS
240
200
150
100
50
NOTE: CONSOLIDATED OPERATION STARTED SEPTEMBER 29 1944.
CASH FARES
1913 & 1914 ARE CALENDAR YEARS
TRANSFERS
SCHOOL AND SPECIAL TICKETS
1915
1920
1925
1930
1935
1940
1945
1949
CHAS. L. REED

Interest Charges:

Interest charges on outstanding bonds during the year totaled $260,681.76. Of this amount, $107,194.79 was charged to interest expense, and $153,486.97 was charged to interest during construction, to be capitalized.

From December 28, 1912, to June 30, 1949, the total charges for interest on outstanding bonds and interest paid to the Market Street Railway Company on the purchase totaled $5,351,852.33. Of this amount, $5,160,094.17 was capitalized, and $191,578.16 was charged to interest during construction, as follows:

Bond Interest Charged to Interest Expense	$4,762,934.97
Market Street Railway Purchase Interest Charged to Interest Expense	397,159.20
Bond Interest 1947 Rehabilitation Bonds Charged to Interest During Construction—Capitalized	191,758.16
Total	$5,351,852.33

Bonds Redeemed:

During the year, outstanding bonds were redeemed in the amounts as follows:

1913 Issue	$100,000
Refinancing—1947 Issue	100,000
Rehabilitation—1947 Issue	434,000
Total	$634,000

Since December 28, 1912, to June 30, 1949, the total amount of bonds issued was $22,331,000. The amount outstanding as of June 30, 1949, totaled $16,716,000, the amount of $5,615,000 having been redeemed.

In addition to the above amount of bonds redeemed, the railway paid the Market Street Railway on the purchase of properties the amount of $5,618,601.29 from funds other than bond funds. The balance of the $7,500,000 purchase, or $1,881,398.71, was paid from the 1947 Refinancing Bond Fund. (See Schedule II in this report for details on bonded debt.)

Appraisal of Properties, Provision for Depreciation:

As of June 30, 1948, in accordance with section 128 of the Charter, an appraisal of Municipal Railway properties was made by the San Francisco Controller during the course of which appraisal advice and counsel were furnished by the Public Utilities Bureau of Engineering forces and the management and staff of the Municipal Railway.

The scope of this appraisal comprised a revision of the Municipal Railway and the Market Street Extension made in 1938 and 1944 respectively.

Except in minor instances, no change was made in the recorded cost of the properties.

Depreciable cost was revised wherever experience or reliable information indicated.

The reserve for depreciation was adjusted to conform to the abandonment of electric car operation over certain lines prior to June 30, 1948, and to give effect to the proposed substitution of trolley coach and motor coach operation for electric car operation after June 30, 1948. Also the reserve for depreciation was adjusted to cover those instances wherein excessive or insufficient provisions were apparent.

As a result of the appraisal after the application of property lives and rates of depreciation to the properties, the amount charged to depreciation expense and credited to the depreciation reserve for the fiscal year 1948-49 totaled $1,450,-311.34, an increase of $362,469.89 over the previous year. Of the amount of $1,450,311.34, the amount $786,499.45 is applicable to the original Municipal Railway properties and properties purchased subsequent to September 29, 1944, and $663,811.34 to properties purchased from the Market Street Railway Company.

The appraisal adjustment added $2,807,277.06 to the Reserve for Depreciation as of June 30, 1948. Of this amount $1,149,555.61 was charged against surplus and $1,657,721.45 against a deferred credit account which was set up at the time of the purchase of the Market Street Railway Company's properties.

The deferred credit comprised the excess of appraised value over the purchase price at the time of acquisition.

After giving effect to the adjustments made through the appraisal, at June 30, 1948, the cost value of the original Municipal Railway properties and those purchased subsequent to September 29, 1944, totaled $16,971,326.97, with a reserve for depreciation of $8,803,759.70.

The purchased Market Street Railway properties showed a cost value of $28,255,535.92, with a reserve for depreciation of $25,000,252.73. The combined properties showed a total cost value of $45,226,862.89 with a reserve for depreciation of $33,804,012.43.

As of June 30, 1949, after retirements and additions made during the year, the original Municipal Railway properties showed a cost value of $23,442,891.14 with a reserve for depreciation of $9,104,506.27. Purchased Market Street Railway properties showed a cost value of $20,469,052.32 with a reserve for depreciation of $17,973,214.73. Combined properties showed a total cost value of $43,911,-943.46 with a reserve for depreciation of $27,077,721.00.

Retirement Charges:

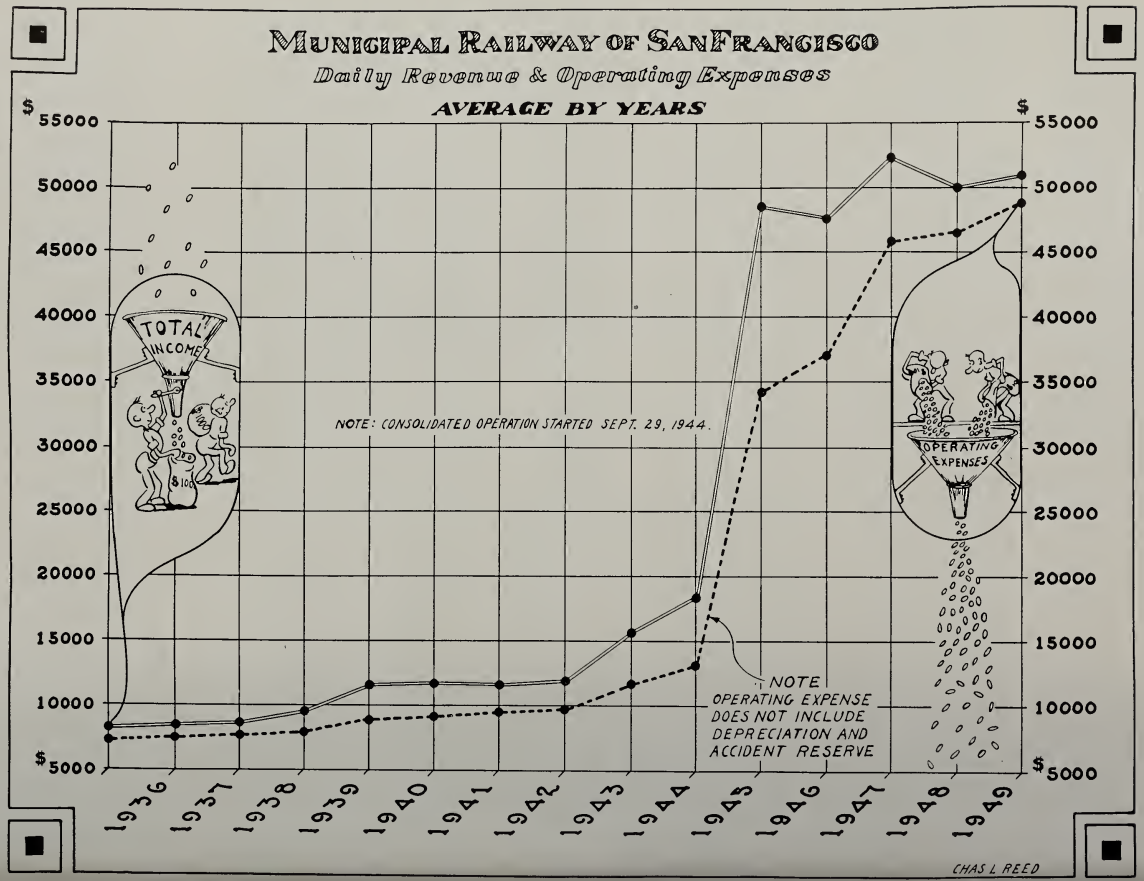
Plant and Equipment, based on historical cost in the case of the original Municipal Railway properties and on appraised original cost in the case of acquired Market Street Railway properties, was retired during the year in an amount totaling $8,385,146. Of this amount, $7,784,252 represents acquired Market Street Railway properties, and $600,894 represents original Municipal Railway properties.

Of the acquired Market Street Railway properties retired in the amount of $7,784,252, the amount of $3,437,102 represents track roadway, overhead wiring, poles, and buildings; the amount of $4,334,887 represents rolling stock and miscellaneous equipment; and the amount of $12,263 represents substation power plant equipment.

MUNICIPAL RAILWAY OF SAN FRANCISCO

Daily Revenue & Operating Expenses

AVERAGE BY YEARS



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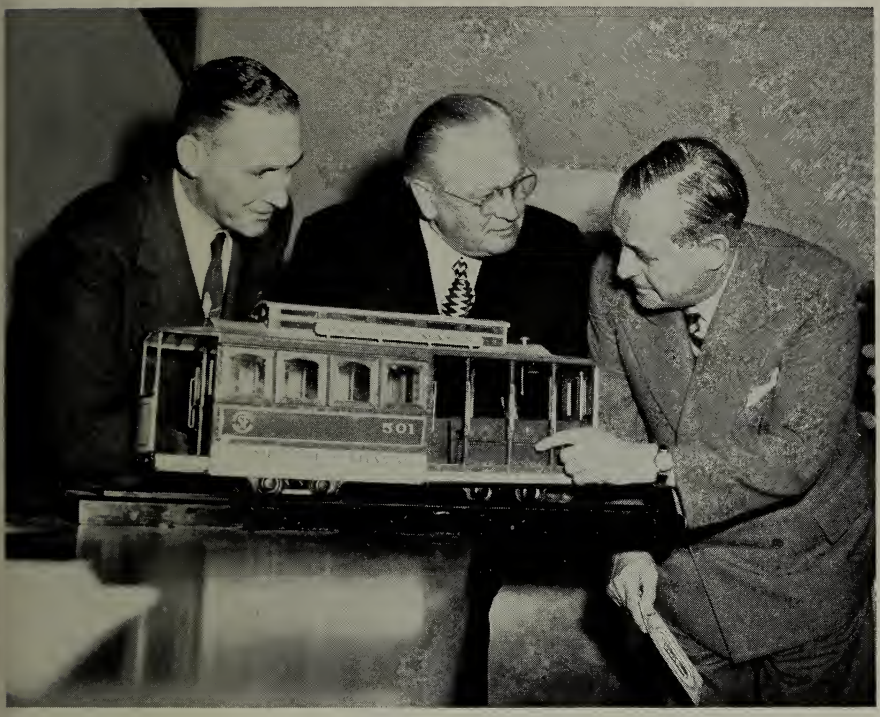


London's transit chief, Lord Latham (right), is shown model cable car by Mayor Robinson and Utilities Manager James Turner.

Track roadway, overhead wiring, pole and building retirements in the amount of $3,437,102 included the following major removals:

Fillmore—Sixteenth Street—the former No. 22 Electric Street Car Line
McAllister—Fulton—the former No. 5 Electric Street Car Line
Haight Street—the former No. 7 Electric Street Car Line
Masonic—Ninth Avenue—the former No. 6 Electric Street Car Line
Hayes Street—the former No. 21 Electric Street Car Line
Sacramento, Clay—the former Cable Car Line.
Market Street—the inner tracks from Eddy to Valencia Street. These tracks were reconstructed by the Municipal Railway.

The loss on these and other miscellaneous track roadway, overhead wiring, pole and building retirements, amounted to $29,891.

Acquired Market Street Railway rolling stock and miscellaneous equipment retired in the amount of $4,334,887 consisted mainly of 219 electric passenger and service cars and 14 motor coaches sold for scrap. The loss on retirements on these and other miscellaneous equipment items amounted to $59,241 less $37,119 received from the sale of above-mentioned equipment, or a net loss of $22,122.

With the abandonment of the No. 40 San Mateo electric street car line, the power plant equipment in the Millbrae substation was retired. The original cost

of this equipment had an appraised value of $12,263, and its retirement resulted in a loss of $1,839.

Of the original Municipal Railway properties retired in the amount of $600,894, the amount of $595,593 represents track roadway, overhead wiring, poles and buildings, and the amount of $5,301 represents miscellaneous equipment.

Track roadway, overhead wiring, pole and building retirements in the amount of $595,593 consisted mainly in the removal of the outer tracks on Market Street from Geary Street to Valencia Street and the retirement of that portion of the Potrero car house that was destroyed in the conversion of that car house to a trolley coach terminal. The long remaining life of the Potrero car house resulted in an unusual loss on retirement in the amount of $102,479. The removal of the outer tracks on Market Street and miscellaneous track retirements over the system increased the loss on retirements of track, overhead wiring, poles and buildings to the amount of $110,867.

Miscellaneous Municipal Railway equipment in the amount of $5,301 was retired at a loss of $215.

The gross loss on retirements of the combined system in the amount of $202,054 was reduced by the amount of $64,338—the receipts from salvage and scrap sales of equipment. The net loss on retirements in the amount of $137,716 was charged to income, as compared with the net loss on retirements for the fiscal year 1947-48 in the amount of $196,781.

Passenger Vehicles:

As of the date of consolidation, September 29, 1944, the Municipal Railway acquired a total of 611 passenger vehicles from the Market Street Railway Company, which total consisted of 440 electric street cars, 38 cable cars, 124 motor coaches, and 9 trolley coaches.

At that time, the original Municipal Railway equipment totaled 288 vehicles, of which electric street cars totaled 238, motor coaches 41, and trolley coaches 9.

The combined total numbered 899 vehicles: 678 electric street cars, 38 cable cars, 165 motor coaches, and 18 trolley coaches.

From September 29, 1944, to June 30, 1949, 388 acquired Market Street Railway Company and 28 original Municipal Railway vehicles have been retired.

In the same period, the railway received a total of 636 vehicles, numbering 10 electric street cars, 396 motor coaches, and 230 trolley coaches.

As of June 30, 1949, the railway owned a total of 1,119 vehicles, comprising 347 electric street cars, 27 cable cars, 497 motor coaches, and 248 trolley coaches.

In addition to the motor coaches owned, in the period from consolidation—September 29, 1944, to April 30, 1948—the railway leased motor coaches from the United States Navy, varying in number up to 35.

New Coaches on Order:

As of August 19, 1949, a requisition has been placed and bids called for on 50 new 48-passenger trolley coaches.

MUNICIPAL RAILWAY OF SAN FRANCISCO
INVENTORY OF PASSENGER VEHICLES OWNED, RECEIPTS, AND RETIREMENTS

Original Municipal Railway and Purchases Subsequent to September 29, 1944 and Acquired Market Street Railway Combined Totals

	Electric Cars	Cable Cars	Motor Coaches	Trolley Coaches	Total
On hand 9/29/44	678	38	165	18	899
Received 1944-1945	..	..	31	..	31
Retired 1944-1945	*9*	..	*1*	..	*10*
Balance 6/30/45	669	38	195	18	920
Received 1945-1946	..	..	36	..	36
Retired 1945-1946	*10*	..	*13*	..	*23*
Balance 6/30/46	659	38	218	18	933
Received 1946-1947	..	..	40	16	56
Retired 1946-1947	*60*	..	*5*	..	*65*
Balance 6/30/47	599	38	253	34	924
Received 1947-1948	..	..	145	24	169
Retired 1947-1948	*46*	*11*	*31*	..	*88*
Balance 6/30/48	553	27	367	58	1,005
Received 1948-1949	10	..	144	190	344
Retired 1948-1949	*216*	..	*14*	..	*230*
Balance 6/30/49	347	27	497	248	1,119

MUNICIPAL RAILWAY OF SAN FRANCISCO
INVENTORY OF PASSENGER VEHICLES OWNED
RECEIPTS, AND RETIREMENTS

July 1, 1944, to June 30, 1949

Acquired from Market Street Railway Company

	Electric Cars	Cable Cars	Motor Coaches	Trolley Coaches	Total
Received 9/29/44	440	38	124	9	611
Retired 1944-1945	*9*	..	*1*	..	*10*
Balance 6/30/45	431	38	123	9	601
Retired 1945-1946	*10*	..	*12*	..	*22*
Balance 6/30/46	421	38	111	9	579
Retired 1946-1947	*58*	..	..	..	*58*
Balance 6/30/47	363	38	111	9	521
Retired 1947-1948	*27*	*11*	*30*	..	*68*
Balance 6/30/48	336	27	81	9	453
Retired 1948-1949	*216*	..	*14*	..	*230*
Balance 6/30/49	120	27	67	9	223

Italic figures denote loss and deficiency.

ORIGINAL MUNICIPAL RAILWAY AND PURCHASES SUBSEQUENT TO SEPTEMBER 29, 1944

	Electric Cars	Cable Cars	Motor Coaches	Trolley Coaches	Total
On hand 7/1/44	238	..	41	9	288
Received 1944-1945	..	..	31	..	31
Retired 1944-1945	..	..	..	..	..
Balance 6/30/45	238	..	72	9	319
Received 1945-1946	..	..	36	..	36
Retired 1945-1946	..	..	*1*	..	*1*
Balance 6/30/46	238	..	107	9	354
Received 1946-1947	..	..	40	16	56
Retired 1946-1947	*2*	..	*5*	..	*7*
Balance 6/30/47	236	..	142	25	403
Received 1947-1948	..	..	145	24	169
Retired 1947-1948	*19*	..	*1*	..	*20*
Balance 6/30/48	217	..	286	49	552
Received 1948-1949	10	..	144	190	344
Retired 1948-1949	..	..	..	..	..
Balance 6/30/49	227	..	430	239	896

Motor Coach and Trolley Coach Garage, Housing and Yard Facilities:

As of July 3, 1949, the date of the major conversion, the railway's fleet of 497 motor coaches was housed and serviced at the coach divisions as follows:

Twenty-fourth and Utah division	168
Ocean division	209
McAllister division	120
Total	497

As of that date, the entire fleet of 248 trolly coaches was housed, serviced, and repaired at the newly completed Potrero trolley coach division.

All major motor coach repairs are made at the twenty-fourth and Utah division where extensive expenditures have been made since consolidation for alterations and new facilities.

The Ocean motor coach division is as modern an installation for service and maintenance as could be provided.

The McAllister division is of a temporary nature for service and minor maintenance.

The railway has 5 modern mechanical coach washers to handle the great task of keeping its combined fleet of 745 motor and trolley coaches as clean and presentable as possible.

These mechanical washers cost approximately $9,300 each, not including installation costs.

Italic figures denote loss and deficiency.

TROLLEY COACH YARD
Presidio yard will handle 155 trolley coaches.

One is located at the Ocean division, one at the Twenty-fourth and Utah division, and three at the Potrero division. Only manual coach cleaning facilities are available at the McAllister division.

Owing to the crowded conditions at the Twenty-fourth and Utah motor coach division and the objections to further enlargement of facilities at this location, it is contemplated to build and install facilities at the presently owned Kirkland yard site which would become a new motor coach dispatching and service division.

The new Geary Street trolley coach yard and service division, to accommodate 155 trolley coaches, should be completed in February, 1950.

Transit Studies and Plans:

The several transit studies and plans that have been prepared and submitted are presently being considered and will form a basis for a program to be adopted in regard to future transit improvement.

Mention is made below of the several plans and studies which are being considered.

Early in March, 1948, the city's technical committee on transportation needs released a report based on a survey being made by Charles E. DeLeuw, consulting

engineer of the firm of DeLeuw Cather and Co. This report recommended detailed changes in lines from street car to trolley coach and motor coach operation with the retention of street cars on the Market Street tunnel lines and on Geary and Stockton streets.

Later in March, 1948, an emergency transit plan, with the view of providing current transit improvement, was prepared by Colonel Sydney H. Bingham, New York transportation commissioner, recommending changes principally from street car to motor coach operation on all lines other than the Market Street tunnel lines, Geary Street, and Stockton Street. He also recommended retention of present cable car lines and trolley coach lines.

In August, 1948, a "work sheet" report was submitted by Charles E. DeLeuw of DeLeuw Cather & Co., outlining suggestions for a system of state-built freeways, a Market Street subway to Twin Peaks Tunnel, a modernized traffic signal installation, and plans for increased "one-way street" traffic.

In December, 1948, a final report was submitted by DeLeuw Cather and Co., covering a long range plan for San Francisco's transit needs. It involved the expenditure of some $111,000,000 for a system of freeways and $82,600,000 for a rapid transit system including subways.

In February, 1949, a long range plan for rapid transit was submitted by Colonel Sydney H. Bingham, stressing the construction of various subways and involving the expenditure of some $143,775,000.

Also in February, 1949, another plan, dealing with rapid transit, was presented by Mr. R. S. Chew, consulting engineer. This plan mentioned, among other things, an elevated system linking the bay bridge trackage with Twin Peaks and Duboce tunnels and fast electric train service from peninsula cities to San Francisco.

Wages and Salaries:

A major item in the mounting costs of railway operation is the increase in the wages of platform personnel, mechanics, and other employees of the railway.

At a general election held on November 5, 1946, a charter amendment was voted upon amending section 151.3 of the Charter, which amendment provides for a standardized method of fixing wages of Municipal Railway platform men and bus operators. The amendment was approved by the voters by a vote of 181,059 "yes," to 55,557 "no." The amendment was ratified by the State Legislature on January 7, 1947.

This amendment provides that the wages of platform men and bus operators of the Municipal Railway shall be fixed each year at the average of the two highest wage schedules of platform employees and bus operators of other street railway systems in California in effect on July 1 of that year.

The Civil Service Commission is required to certify to the Board of Supervisors the two highest wage schedules, and the Board of Supervisors is required to fix a rate which is the average of the two.

The amendment further provides that in the event the average wage schedule of other railways as of July 1 in any year is less than the rates fixed by the Board of Supervisors on March 18, 1946, then the new rate shall be the same as the rates fixed March 18, 1946. These rates per hour for platform men were $1.00 for the first six months, $1.05 for the second six months, and $1.10 thereafter, and for

bus operators $1.05 per hour for the first six months, $1.10 for the second six months, and $1.15 thereafter.

Commencing July 1, 1946, the amendment further provides for time and one-half for six holidays each year and designates that platform employees and bus operators shall receive 20 cents per hour while instructing new employees.

According to the provisions of this amendment, the platform wages were fixed at $1.24 per hour for the fiscal year 1946-47, $1.368 per hour for the fiscal year 1947-48, and at $1.484 per hour for the fiscal year 1948-49.

The above rate of $1.484 per hour, effective July 1, 1948, was challenged by a taxpayers' suit and, pending the outcome of this court action, the previous year's rate of $1.368 per hour was paid and the balance impounded. After January 15, 1949, in accordance with a "Writ of Mandate of the Supreme Court," the impounded amount was paid and the rate of $1.484 was paid for the period to June 30, 1949.

The increased cost to the railway for these rates, plus increases to other employees, amounted to approximately $3,400,000 in the past three years. The increase in the fiscal year 1946-47 amounted to approximately $1,500,000, in the fiscal year 1947-48 approximately $1,000,000, and in the past year approximately $900,000.

Following is a tabulation of platform employees' wages since December 28, 1912, to July 1, 1949:

MUNICIPAL RAILWAY OF SAN FRANCISCO
PLATFORM WAGES

Rates and Effective Dates

Dates	Street Car Operators		Coach Operators	
	Per Hour	Per Day	Per Hour	Per Day
Dec. 28, 1912 to Apr. 30, 1917	.375	3.00		
May 1, 1917	.4375	3.50		
July 1, 1918	.50	4.00		
Apr. 16, 1919	.5625	4.50		
July 1, 1919	.625	5.00		
Sept. 16, 1923	.675	5.40		
Apr. 16, 1926	.725	5.80		
Jan. 1, 1927	.75	6.00		
July 1, 1933	.75	6.00	.80	6.40
July 1, 1941	.75	6.00	.825	6.60
July 1, 1942	.80– .875	6.40–7.00	.875	7.00
July 1, 1943	.85– .925	6.80–7.40	.90– .975	7.20–7.80
July 1, 1944	.90– .975	7.20–7.80	.95–1.025	7.60–8.20
July 1, 1945	.90– .975	7.20–7.80	.95–1.025	7.60–8.20
July 1, 1946*	1.00–1.10	8.00–8.80	1.05–1.15	8.40–9.20
July 1, 1946	1.24	9.92*	1.24	9.92
July 1, 1947	1.368	10.944	1.368	10.944
July 1, 1948†	1.484	11.872	1.484	11.872
July 1, 1949	1.506	12.048	1.506	12.048

*Above revised by charter amendment voted upon November 5, 1946, and ratified January 7, 1947, retroactive to July 1, 1946, to $1.24 per hour for all men.

†The above rate of 1.484 was set effective July 1, 1948, but pending suit to determine the legality of the rate, the previous year's rate of 1.368 was paid and the balance was impounded. After Jan. 15, 1949, in accordance with a "Writ of Mandate of the Supreme Court," the impounded amount was paid and the rate of 1.484 was paid for the period to June 30, 1949.

Transportation and Schedule Departments:

During the year, the work of the schedule and transportation departments continued to be a heavy task owing to transition taking place from electric street car to motor and trolley coach operation.

To indicate the volume of work encountered in the drafting of new schedules, the compilation of traffic checks, and the conducting of surveys for new routes and extensions, the following tabulation is given:

New Schedules Drafted	486
Traffic Checks Made	88
Observation Checks Made	10
Running Time Checks Made	43
Surveys for New Routes and Extensions	90

The change taking place in the types of service rendered for street car to motor and trolley coach operation is noticeable from a review of the mileage operated by types of equipment in the year 1948-49 as compared with the mileage operated in the three previous years as noted in the following tabulation.

MILEAGE OPERATED BY TYPES OF EQUIPMENT

Fiscal Year	Electric Street Car	Motor Coach	Trolley Coach	Cable Car	System Total
1948-1949	10,821,122	17,233,416	1,986,524	435,824	30,476,886
1947-1948	15,530,556	11,767,885	1,331,994	436,424	29,066,859
Inc. or *Dec.*	*4,709,434*	5,465,531	654,530	*600*	1,410,027
Inc. or *Dec.* %	*30.324*	46.444	49.139	*.137*	4.851
1948-1949	10,821,122	17,233,416	1,986,524	435,824	30,476,886
1946-1947	18,306,441	10,412,688	886,008	458,162	30,063,299
Inc. or *Dec.*	*7,485,319*	6,820,728	1,100,516	*22,338*	413,587
Inc. or *Dec.* %	*40.889*	65.504	124.211	*4.876*	1.376
1948-1949	10,821,122	17,233,416	1,986,524	435,824	30,476,886
1945-1946	19,889,939	8,352,364	824,440	388,204	29,454,947
Inc. or *Dec.*	*9,068,817*	8,881,052	1,162,084	47,620	1,021,939
Inc. or *Dec.* %	*45.595*	106.330	140.954	12.267	3.469

Two general sign-ups were conducted during the year covering the entire platform personnel of the railway.

A compilation in chronological order of conversions, reroutings, revisions, consolidations, and extensions of street car lines, motor and trolley coach routes made during the year is noted in the following statement:

Italic figures denote loss and deficiency.

CHANGES IN STREET CAR LINES AND MOTOR COACH ROUTES
NEW LINES AND ROUTES
DISCONTINUANCE OF LINES AND ROUTES
EXTENSIONS AND RE-ROUTINGS

July 1, 1948 to July 5, 1949

Date	Line	Changes, Revisions, New Routings, etc.
7/ 3/48		No. 44 M.C.—Service discontinued on Saturday only.
7/ 3/48		No. 6—Last day of street car operation.
7/ 4/48		No. 6 M.C.—Motor coach service substituted for street cars with service from Ninth and Pacheco to Ferry; evening service and Sundays from Ninth and Pacheco to Haight and Masonic.
7/ 3/48		No. 7—Last day of street car operation.
7/ 4/48		No. 7 M.C.—Motor coach service substituted for street cars. Weekday and Saturday service from Balboa and La Playa to Ferry (alternate coaches turn back at 19th Avenue and Lincoln Way); Sunday service from Balboa and La Playa to Fourth and Market.
7/ 4/48		No. 10 M.C.—Discontinued. Area being served by Line 7.
7/ 4/48		No. 20 M.C.—Service to beach discontinued. Outer terminal re-established at Haight and Stanyan.
7/11/48		No. 36 M.C.—Service discontinued. Rerouting of No. 27 line and added service on Line "E" substituted.
7/11/48		No. 27 M.C.—Rerouted from 26th and Folsom, via Folsom, Precita, Bryant, to 26th and Bryant. Extended after 9:00 p. m. from 29th and Mission via Mission, 26th, Folsom, Precita, to Bryant and Army.
7/31/48		No. 22—Last day of street car operation.
7/31/48		No. 25—Last day of street car operation.
7/31/48		No. 4—Last day of street car operation.
8/ 1/48		No. 22 M.C.—Motor coach service substituted for street cars. Route extended from 18th and Third to 20th and Third. Alternate coaches to 16th and Bryant.
8/ 1/48		No. 25 M.C.—Motor coach service substituted for street cars. Weekday and Saturday service from Army and Potrero via Bryant to Fifth and Jessie.
8/ 1/48		No. 4 M.C.—Motor coach service substituted for street cars. Service from Sixth and Fulton to Sutter and Larkin. Express service inbound from Bush and Fillmore to Sutter and Larkin.
8/ 1/48		No. 3—Operation shuttle service between Sutter and Fillmore and East Bay Terminal.
8/ 1/48		No. 3 M.C.—Day operation from Presidio and California to Sutter and Fillmore. Night operation to Sutter and Larkin.
8/ 1/48		Inauguration of Mariposa Division, trolley coach terminal.
8/ 1/48		No. 4E M.C.—Inner terminal established at Aquatic Park.
8/ 1/48		Inauguration of Ocean Division, motor coach terminal.
8/13/48		No. 27 M.C.—Last day of street car operation. Added service on motor coaches.

Date	Line	Changes, Revisions, New Routings, etc.
10/ 1/48		No. 1–2 M.C.—Rerouted inbound and outbound along Point Lobos, west of 41st Avenue. Curb stops on Geary Boulevard between 33rd and 41st Avenues.
10/ 1/48		No. 7B M.C.—Rerouted from Grafton and Plymouth, via Plymouth, Lakeview, Capitol, Grafton, and thence over regular route, inbound and outbound.
10/ 4/48		No. 25-9 M.C.—Northbound coaches from Arleta use Bayshore Boulevard, San Bruno, Army and Regular route.
10/31/48		No. 12—Last day of street car operation.
10/31/48		No. 18 M.C.—Line extended on Sunday from St. Francis Circle to Onondaga and Mission.
1/16/49		Inauguration of Potrero Division, trolley coach terminal.
1/16/49		No. 22 T.C.—Motor Coach Line No. 22 converted to trolley coach operation.
1/16/49		No. 24 M.C.—Inbound terminal at Webster and Jackson; Marina district will be served by Line 22.
1/15/59		No. 9—Last day of street car operation.
1/17/49		No. 9 M.C.—Motor coach service substituted for street cars.
1/15/49		No. 11—Last day of street car operation.
1/17/49		No. 11 M.C.—Motor coach service substituted for street cars.
1/15/49		No. 14—Last day of street car operation.
1/15/49		No. 41—Discontinued. Service by "F" line.
1/16/49		No. 14 M.C.—Motor coach service substituted for street cars. Express service operating from Richland and Mission to Fifth and Jessie.
1/17/49		No. 26 M.C.—Express service in operation during morning and evening peak periods.
2/ 1/49		No. 1 M.C.—Renumbered to 10 and designation changed from California-Mission to Monterey.
2/ 1/49		No. 2 M.C.—Renumbered to 16 and designation changed from Sunset Express to Noriega.
2/ 1/49		No. 3 M.C.—Renumbered to 28 and designation changed from Army-Potrero-Sea Cliff to Alemany.
2/ 1/49		No. 5 M.C.—Renumbered to 34 and designation remains Marina.
2/ 1/49		No. 7 M.C.—Renumbered to 36 and designation remains Miraloma.
2/ 1/49		No. 8 M.C.—Renumbered to 37 and designation changed from Market and Corbett to Corbett.
2/ 1/49		No. 9 M.C.—Renumbered to 38 and designation changed from Bayshore to Portola.
2/ 1/49		No. 11 M.C.—Renumbered to 39 and designation changed from Telegraph Hill to Coit.
2/ 1/49		No. 4E M.C.—Renumbered to 32 and designation remains Embarcadero.
2/ 1/49		No. 6C M.C.—Renumbered to 35 and designation changed from Castro-Mission to Eureka.
2/ 1/49		"E" T.C.—Renumbered to 41 and designation remains Union and Howard.
2/ 1/49		No. 14 M.C.—Renumbered to 43 and designation remains Roosevelt.

Date	Line	Changes, Revisions, New Routings, etc.
2/10/49	No. 11 M.C.	—Rerouted from 24th and Dolores via Dolores, 22nd Street to Mission. Shuttle service from 24th Street and Hoffman via 24th Street, Dolores, 22nd Street, Valencia, 20th Street, to 22nd and Mission, after evening peak and on Sundays and holidays.
2/15/49	No. 2 M.C.	—Shuttle service inaugurated from 44th Ave. and Geary to Balboa and La Playa.
2/15/49	No. 1–2	—Outer terminal for street cars changed to 45th Avenue and Geary, due to fire at Sutro depot.
3/21/49	No. 31	—All cars terminate at Market and Eddy Streets due to track reconstruction on Market.
3/21/49	Street cars to Ferry discontinued. All car lines terminate at East Bay Terminal.	
3/21/49	No. 7 M.C.	—Line extended from Fourth and Market to Ferry after evening peak. Owl combined with "N" line service, operating from Great Highway and Judah via Judah, Ninth Avenue, Irving, Carl, Cole, Haight, and Market to Ferry.
3/21/49	No. 16 M.C.	—Service to Fourth and Market after evening peak extended to Ferry.
3/27/49	No. F	—Motor coach operation after evening peak Monday through Saturday and all day Sunday and holidays from Stockton and Market.
3/28/49	No. 42 M.C.	—Line extended to Ingalls and Donner. Alternate coaches to S. F. Naval Shipyards.
4/ 3/49	No. 57 M.C.	—Rerouted from Candlestick Cove over streets in project to S. F. Naval Shipyards and return. Double Rock Trips rerouted from Fitzgerald-Ingalls over streets in project to S. F. Naval Shipyards and return.
4/ 4/49	No. 53 M.C.	—Rerouted from 22nd and Wisconsin, 25th, Dakota, 23rd, Arkansas, 20th, Missouri, to 18th and regular route.
4/ 9/49	Lines B, C, D	—Terminate at Market Street temporarily, due to track reconstruction.
4/16/49	No. 55 M.C.	—Sacramento Street reconstruction completed. Coaches return to regular route.
4/24/49	No. 15 M.C. No. 19 M.C.	—Lines extended to Mason and Embarcadero for this day only, to allow patrons to participate in Open House celebration on Angel Island.
5/ 1/49	No. 10 M.C.	—Partial rerouting outbound, past De Young Museum and Oriental Tea Gardens, thence over established route. Effective Sundays and holidays between hours of 12:00 noon and 5:00 p.m.
5/12/49	No. 25 M.C.	—Outbound from San Bruno and Wilde Avenue, via Wilde, Brussels, Harkness, Goettingen, Wilde, Delta, Tioga, Rutland, Visitacion, Peabody, Leland, Alpha and Arleta to San Bruno. Return over regular route.
6/ 2/49	No. 5-6-7-16-21 M. C.	—Track work on Market Street completed. Coaches resume regular route.
6/27/49	No. 8 M.C.	—Line extended to West Portal and Ulloa for one week only to allow track removal at 18th and Castro Streets.
7/ 3/49	No. 5 M.C.	—Converted to trolley coach operation.
7/ 3/49	No. 6 M.C.	—Converted to trolley coach operation. Extended to 14th and Quintara.

Date	Line	Changes, Revisions, New Routings, etc.
7/ 3/49		No. 7 M.C.—Converted to trolley coach operation. Operates from Ferry via Market, Haight, Schrader, Waller to Stanyan. Return via Stanyan, Haight, Laguna, Page and Market to Ferry.
7/ 1/49		No. 8—Last day of street car operation.
7/ 3/49		No. 8—Converted to trolley coach operation. Operates from Ferry via Market to 18th and Castro.
7/ 3/49		No. 16 M.C.—Night service and all day Sunday and holidays to Haight and Masonic only, connecting with No. 6 line trolley coach.
7/ 3/49		No. 20 M.C.—Extended to Balboa and La Playa during peak periods. Alternate coaches return from 20th and Lincoln Way. Operating from Balboa and La Playa via La Playa, Fulton, Great Highway, Lincoln Way, Frederick, Stanyan, Oak, Divisadero and Ellis to Market. On trips from S. P. Depot via Townsend, Fourth Street, Ellis, and regular route. Owl service via "N" line from Great Highway and Judah, via Judah, Ninth Avenue, Irving, Arguello, Carl, Cole, Haight, Laguna, Page and Market to Ferry.
7/ 3/49		No. 21 M.C.—Converted to trolley coach operation. Night service to Jones and Market only. Eighth Avenue service discontinued and now operates in and out on Sixth Avenue.
7/ 2/49		No. 31—Last day of street car operation.
7/ 3/49		No. 31—Converted to all motor coach operation.
7/ 2/49		No. 1—Last day of street car operation.
7/ 3/49		No. 1—Converted to all motor coach operation.
7/ 2/49		No. 2—Last day of street car operation.
7/ 3/49		No. 2—Converted to all motor coach operation.
7/ 2/49		No. 3—Last day of street car operation.
7/ 3/49		No. 3 M.C.—Extended via Fillmore, Sutter, Sansome, Bush, Battery, Market to Sansome and Sutter.
7/ 5/49		No. 4 M.C.—Rerouted from Sansome and Sutter via Sutter to Divisadero.
7/ 3/49		No. 55 M.C.—Extended to Sixth Avenue and California.
7/ 5/49		No. 25 M.C.—South terminal extended to Third and San Bruno to serve route previously served by "H" line.
7/ 3/49		"H" M.C.—Inauguration of motor coach service at night and all day Sundays and holidays.
7/ 2/49		"H"—Line shortened. Street car service from Van Ness and Bay to Potrero and Army only.
7/ 3/49		"H" M.C. Owl—Operates from Scott and Chestnut via Chestnut, Van Ness, 11th Street, Division, Potrero, Bayshore, San Bruno, thence on route of No. 25 M.C. Return via San Bruno, Bayshore, Potrero, Division, 11th Street, Van Ness, Chestnut, Pierce, Lombard and Scott to Chestnut.

Round Trip Miles of Streets Traversed:

The total round trip miles of streets traversed by street cars and coaches of the railway, as of July 3, 1949, totaled 484.77 miles as compared with the figure of 492.21 miles four years previous on June 30, 1945, a decrease of 7.44 miles.

Motor coach miles increased 123.03 miles, trolley coach miles increased 52.61 miles, while street car miles decreased 183.08 miles.

A comparative statement of round trip miles of streets traversed by the various types of passenger vehicles of the railway on July 3, 1949, as compared with the figure on June 30, 1945, follows:

MUNICIPAL RAILWAY OF SAN FRANCISCO
ROUND TRIP MILES OF STREETS TRAVERSED
Comparison—July 3, 1949, and June 30, 1945

	Round Trip Miles of Streets Traversed July 3, 1949	June 30, 1945	Increase or *Decrease*
Electric Street Car	80.00	263.08	*183.08*
Cable Car	6.21	6.21	....
Total Electric and Cable	86.21	269.29	*183.08*
Motor Coach	328.95	205.92	123.03
Trolley Coach	69.61	17.00	52.61
Total Motor and Trolley Coach	398.56	222.92	175.64
Total Electric and Cable Cars and Motor and Trolley Coaches	484.77	492.21	*7.44*

Italic figures denote loss and deficiency.

Population Figures:

The population of San Francisco is now estimated at the figure of 814,500, according to the latest available figures. This compared with the census figure of 634,536 in 1940 shows an increase of 179,964, or 28.36 per cent.

There has been a similar great increase in population in the immediate bay-area region adjacent to San Francisco. The 5 bay-area counties of San Francisco, Alameda, San Mateo, Marin, and Contra Costa have an estimated population of 2,125,500. The Metropolitan Area comprised of counties of San Francisco, Alameda, San Mateo, Marin, Contra Costa, and Solano has an estimated population of 2,243,000. The inclusion of Napa, Santa Clara, and Sonoma counties to the above-mentioned 6 counties brings the population of the San Francisco bay region to 2,645,150.

The magnitude of the task of supplying San Francisco with adequate modern transit facilities is greatly accentuated by reason of the hilly topographical features of the city, the density of its business, financial, hotel, and apartment house area, and the geographical layout of its streets, with many of its principal streets converging into the main artery of Market Street.

Radio Control System and Headway Recorder:

During the past year, the two new facilities which were inaugurated in the fiscal year 1946-47, designed to speed up schedules and to control and improve service, were continued in operation. One is a two-way radio installation with transmitter located on Twin Peaks. This installation provides contact with two-way radio-equipped automobiles. The other is a headway recorder system, electrically recording headways.

Both installations are operated from a central control room at the Geary Street car house.

Central Control, with radio station KCRJ and 29 mobile units, was inaugurated on January 6, 1947.

The following is a statement of messages transmitted by radio for the period July 1, 1948, to June 30, 1949:

RADIO MESSAGES TRANSMITTED

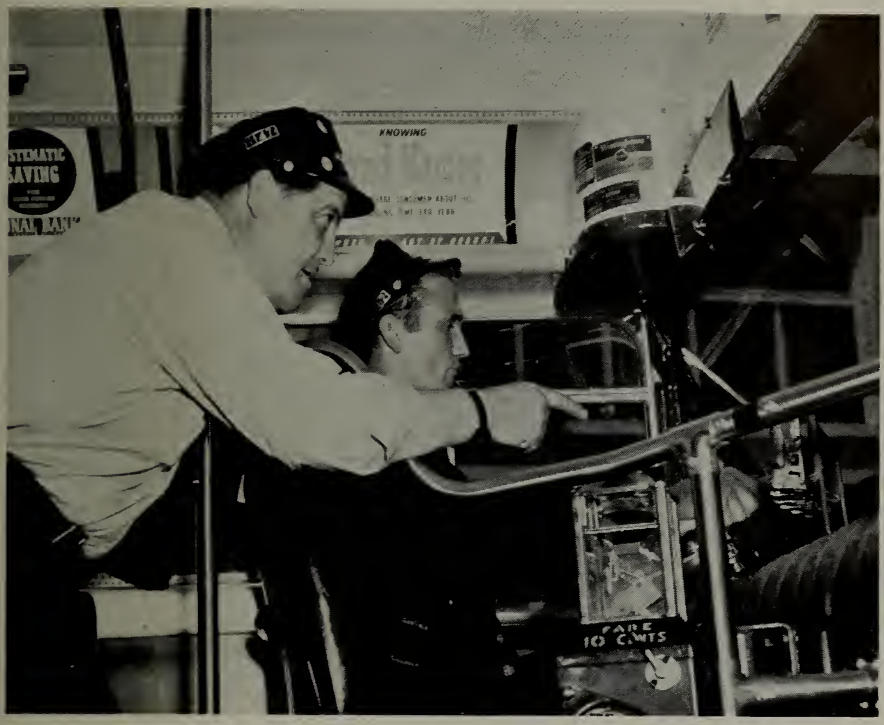
Month 1948	Monthly Total	Daily Average
July	6,810	220
August	6,369	206
September	6,780	226
October	7,810	252
November	6,549	218
December	7,701	248
1949		
January	8,431	272
February	7,058	252
March	8,300	268
April	7,924	264
May	7,521	242
June	7,632	254
Total	88,885	243

Central Control is equipped with headway recorders to handle 40 locations, 2 contactors at each location to record cars travelling in both directions. On account of the substitution of street car operation by motor car operation on lines Nos. 1, 2, 3, 4, 9, 11, 14, and 31, the present number of locations at which headway recorders are operated is 31. The 9 presently unused locations will be restored to use when trolley coach operation is inaugurated

In June, 1947, a radio receiver with a fixed frequency tuned to police radio station KGPD was installed, enabling the operators of Central Control to be informed of fires and accidents which may affect the street car lines or coach routes of the railway.

The Central Control office is in operation daily from 6:00 a. m. to 1:30 a. m., during which time the operator in charge of the headway recorders receives and answers all calls for information relative to the operation of the railway. All such calls are routed from the main telephone switchboard direct to the headway recorder desk.

Reports of all operators of Central Control are made daily and forwarded to the various department heads and to the General Manager. A file of all reports is maintained in the Central Control office.



". . . AND DON'T FORGET TO . . ."
Every new operator goes through a training period.

All operations of Central Control, including radio, headway recorder, and information desk, are performed by a staff of 4 men who are under the supervision of Mr. Hobart G. Wilson, Chief Inspector.

Fare Increase:

On account of the greatly increased cost of operation, including wage increases and increased cost of gasoline, other materials and supplies, and tire rental, and also the service charges for interest and redemption on the outstanding bonds, the railway budget for the fiscal year 1948-49 provided, in addition to the revenues from operation, receipts from tax sources and from surplus railway funds.

The amounts contemplated from the latter sources comprised $293,723 from railway surplus funds, $728,030 from Use Tax monies, and $1,776,703 from ad valorem tax monies.

In view of the above, after full discussion and consideration and taking into account the inadvisability of effecting reduced operating costs through service cuts, the Public Utilities Commission, on October 11, 1948, by resolution No. 9310, approved an increase in the railway fare structure to a straight 10 cent fare, eliminating the 8⅓ cent token rate, an increase in the charge for school ticket rides from 3⅛ cents to 5 cents, an increase in the fare on the then operated

No. 40 San Mateo line from 25 cents to 30 cents, and an increase in chartered car and coach service. On October 18, 1948, the Public Utilities Commission, by resolution No. 9319, fixed the effective date of the fare increase as December 1, 1948.

In this connection it should be noted that an increase in fares was granted, effective July 17, 1947, to the privately-owned California Street Cable Railroad Company operating in San Francisco from the 10 cent cash or 8⅓ cent token rate to a straight 10 cent fare.

Early in November, 1948, the Board of Supervisors acted on the rate increase proposed by the Public Utilities Commission, the rate increase receiving 4 "yes" votes and 6 "no" votes.

At the time this action by the Board of Supervisors was considered as legally preventing the increase, and as a consequence the Public Utilities Commission by resolution No. 9639, approved on November 8, 1948, resolved that the commission would not press further at this time for an increase in the fare structure.

On November 24, 1948, a taxpayers' suit was filed by James Hurst and Mildred F. Hurst to compel the institution of the rate increase as proposed by the Public Utilities Commission. The main point of the suit was that 8 negative votes of the Board of Supervisors were required to disapprove of the fare increase, whereas only 6 negative and 4 yes votes were recorded.

On January 21, 1949, the California State Supreme Court handed down an opinion concurred in by 6 Justices and a dissenting opinion by one Justice. The majority of opinion stated, "There being no rejection of the schedule by a two-thirds majority of the board within the time required, or at all, it is the plain duty of respondents to put into effect such schedule."

After consideration of the decision, including the inadvisability of appeal and the need of the additional revenue, the Public Utilities Commission, by resolution No. 9542, adopted January 24, 1949, fixed the effective date of the new schedule at 5:00 a.m. January 26, 1949.

Increased Revenue from Fare Increase:

From the effective date of the fare increase, January 26, 1949, to June 30, 1949, additional revenues in an estimated amount of $1,216,615 were realized.

The amount of additional revenue lost by reason of the delay in putting the new fare structure into effect, that is from the period between December 1, 1948, the date first proposed by the Public Utilities Commission, and the date of January 26, 1949, after the court decision, amounted to an estimated total of $462,564.

While the budget for the fiscal year 1949-50 did not request any tax support monies, it did include the amount of $1,100,000 from railway prior year surplus funds to supplement the estimated operating revenues.

Therefore, this item of $462,564 of revenues not realized would have been extremely valuable to the railway to offset declining revenues from the current decrease in riding as well as rising labor costs.

A statement showing the basic fare changes in San Francisco from July 6, 1937, to date, follows:

MUNICIPAL RAILWAY OF SAN FRANCISCO

SUMMARY OF BASIC FARE CHANGES ON

SAN FRANCISCO STREET RAILWAYS SINCE JULY 6, 1937

	Municipal Railway of San Francisco		Market Street Railway Co.		California Street Cable Railroad Co.	
	Cash	Tokens	Cash	Tokens	Cash	Tokens
July 6, 1937.....	.05	None	*.05	None	.05	None
May 29, 1938.....	.05	None	.07	.06¼	.05	None
Jan. 1, 1939.....	.05	None	.07	.07	.05	None
Dec. 1, 1942.....	.05	None	.07	.07	.06	None
Sept. 29, 1944.....	.07	None	(Consolidated with Municipal Railway)		.06	None
Oct. 15, 1944.....	.07	.07			.07	.07
May 20, 1946.....	.10	.08⅓			.07	.07
Sept. 16, 1946.....	.10	.08⅓			.10	.08⅓
July 18, 1947.....	.10	.08⅓			.10	None
Jan. 26, 1949.....	.10	None			.10	None

Discontinuance of Tokens:

Following the fare increase on January 26, 1949, the sale of tokens was discontinued, but they were accepted for fares to and including March 15, 1949, and thereafter were redeemed at the rate of 3 for 25 cents to and including April 15, 1949.

At the close of the year on June 30, 1949, the railway records showed 1,935,841 tokens unredeemed at a value of $161,320.08.

Gross Operating Revenues:

Gross operating revenues for the fiscal year 1948-49, amounted to $18,592,096 as compared with $18,321,592 for the fiscal year 1947-48, an increase of $270,514, or 1.476 per cent, which increase is attributed entirely to the fare increase.

As the railway experienced a decline of 5 per cent in revenue passengers carried for the year, which is considerably lower than the experience of the transit industry throughout the country in general, it will be seen that but for the fare increase on January 26, 1949, the railway would have suffered a considerable loss in revenue under the previous year.

A comparative statement, detailing revenues by months for the fiscal years 1947-48 and 1948-49, and a statement, detailing the daily average passenger receipts for the past five fiscal years, follows:

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*From July 6, 1937 to May 29, 1938, a 2c charge was made for transfers on the lines of the Market Street Railway Company.

MUNICIPAL RAILWAY OF SAN FRANCISCO
COMPARISON OF GROSS OPERATING REVENUE
Fiscal Years 1948-1949 and 1947-1948

1948	1948-1949*	1947-1948	Increase or *Decrease*	Percent
July	$1,477,698.07	$1,564,414.03	*$86,715.96*	*5.54*
August	1,515,127.09	1,574,032.35	*58,905.26*	*3.74*
September	1,486,387.64	1,541,814.40	*55,426.76*	*3.59*
October	1,532,656.68	1,611,416.78	*78,760.10*	*4.89*
November	1,453,469.79	1,482,863.63	*29,393.84*	*1.98*
December	1,504,743.21	1,586,230.73	*81,487.52*	*5.14*
July to December	$8,970,082.48	$9,360,771.92	*$390,689.44*	*4.17*
1949				
January*	$1,469,533.48	$1,512,391.28	*$ 42,857.80*	*2.83*
February	1,472,840.59	1,379,322.33	93,518.26	6.78
March	1,715,157.68	1,565,283.85	149,873.83	9.57
April	1,688,868.36	1,478,162.38	210,705.98	14.25
May	1,638,257.57	1,492,104.08	146,153.49	9.80
June	1,637,356.17	1,533,546.07	103,810.10	6.77
January to June	$9,622,013.85	$8,960,809.99	$661,203.86	7.38
Total	$18,592,096.33	$18,321,581.91	$270,514.42	1.48

ORGANIZATION AND PERSONNEL

Management:

Wm. H. Scott ..... General Manager

Transportation:

Duke C. Ormsby ..... General Superintendent of Transportation
Geo. W. Evington, Sr. ..... Superintendent of Transportation
Harry E. Cooley ..... Assistant Superintendent of Transportation
Lawrence G. Marshall ..... Division Superintendent (Retired December 1, 1948)
Geo. S. Lewis ..... Division Superintendent
Wesley R. Mason ..... Division Superintendent
James E. McDevitt ..... Division Superintendent
Albert J. Schirmer ..... Division Superintendent
Ralph Strawn ..... Division Superintendent
Earl Ryan ..... Chief Clerk, Transportation
Hobart G. Wilson ..... Chief Inspector
Harry J. Reedy ..... Senior Inspector

Schedules:

Joseph D. Brogan ..... Supervisor of Schedules (Deceased April 23, 1949)
Earle A. Rambo ..... Supervisor of Schedules
John J. Barry ..... Schedule Maker
Joseph Guidi ..... Schedule Maker
Robert M. Johnson ..... Schedule Maker
James Dickinson ..... Schedule Maker

*January 26, 1949, at 5:00 a.m. Fare Structure Increased to 10c Fare.
Italic figures denote loss and deficiency.

Accounting:

Geo. S. Warren.....Assistant Director of Accounts
Geo. C. Quinn.....Senior Accountant
Melvin F. Kraut.....Accountant
Rulon E. Stevenson.....Accountant
Dorothy E. Johnson.....Cashier
Paul W. Frasher.....Head Clerk, Revenues
Merlin L. Henry.....Head Clerk, Timekeeping
Remo M. DeLuca.....Senior Clerk, Timekeeping
John J. Lyons.....Chief Clerk, Stores and Purchasing
Earl B. Southard.....Head Clerk, Stores and Purchasing
Raymond H. Farrell.....Statistical Clerk

Personnel and Safety:

Paul J. Fanning.....Director, Bureau of Personnel and Safety
James J. Finn.....Personnel Assistant
Renzy G. Hayton.....Chief Instructor
Wm. D. Ratto.....Asst. Chief Instructor Training and Safety
W. J. McDevitt.....Instructor
Richard J. Griffin.....Instructor Statistician Training and Safety

Public Service:

Tom Irwin.....Director, Bureau of Public Service
Adeline Svendson.....Editor, Trolley Topics

Claims:

Donald Mazzoni.....General Claims Agent
Alfred P. Felder.....Chief Clerk, Claims Bureau
Peter F. Beasley.....Senior Claims Investigator
Maurice P. Murphy.....Senior Claims Investigator

Equipment and Power:

Wm. C. Bendel.....General Supt. of Equipment and Power
Chas. D. Miller.....Superintendent of Equipment
Frederick E. Cook.....Superintendent of Motive Power
Victor C. Peterson.....Superintendent of Garage
Frank J. Doyle.....Superintendent of Cable Machinery
David P. Whelan.....General Foreman, Overhead Lines (Retired April 1, 1949)
Brad Smith.....General Foreman, Overhead Lines
James M. Leslie.....Senior Clerk, Shops—Equipment

Track and Roadway:

John H. Ryan.....General Supt., Maintenance of Way Engineering
L. V. Degnan.....Senior Civil Engineer
Wm. B. Bushnell.....Senior Civil Engineer
Ernest Von Husen.....Assistant Engineer
Dennis J. Kennealy.....Senior Clerk, Track and Roadway

Auditing and Accounting:

The accounts of the Municipal Railway are maintained in accordance with the forms and requirements of the California State Public Utilities Commission insofar as these are applicable to publicly owned and operated utilities and also in accordance with Section 64 of the Charter of the City and County of San Francisco.

The centralized control system installed by the Controller has been merged with these accounts with the result that no obligation may be incurred without prior certification of the Controller that funds are available to discharge said obligation when it becomes due.

The cash balances of the Municipal Railway funds were verified in the Treasurer's office as of June 30, 1949, and with the exception of settlements for injuries and damages provision has been made for all ascertained liabilities outstanding as of June 30, 1949.

The accounts and activities of the Municipal Railway are audited currently by the Municipal Railway auditing staff, and frequent audits on various phases of the railway operations are made by the Controller's office force. As provided in ordinance 9.0621, an annual audit of the department is made as of June 30, by a firm of certified public accountants. The accountant's report not having been completed at the time of compilation of this department's report, there may be some differences between the two reports on account of reclassifications and adjustments made by the accountants.

The burden of work encountered by the accounting force of the railway during the year continued extremely heavy, the problems attendant upon the consolidation and rehabilitation being factors.

The large volume of purchases of materials and supplies required by the railway, the heavy issuance of stores in connection with maintenance and rehabilitation work, and the great volume of accounting work pertaining to financial and operating matters were also factors in the difficulties encountered. The increasing availability of more experienced clerical help greatly aided in the accomplishment of the required accounting work.

Each of approximately 13,000 stock items of stores, the total value of which is in excess of $900,000, has been given a code number which designates the part number, object of expenditure number, and storage warehouse location. A perpetual inventory is maintained, giving current inventories and unit values, at each storage warehouse location.

Tabulating Machine Installation:

The modern tabulating machine equipment installation, installed during the fiscal year 1946-47, was modified in the fiscal year 1947-48 to include only those certain functions which were found to be adapted to the use of this equipment.

The functions now being performed by this tabulating machine installation are being performed in a highly satisfactory manner at less cost and in a much shorter period of time than the work could be done manually.

This installation, now operating with a force of six employees, is engaged in performing the following work:

Distributes by account and code number and money value all materials and stores issued each month.

Compiles daily and monthly mileage records for each individual motor and trolley coach and for the various coach routes as well as individual gasoline and oil consumption by individual motor coaches.

Each day, from mileage figures compiled, notification is given to the trolley coach maintenance forces, when each of the total of 248 trolley coaches operated is due for lubrication or general servicing.

Annually the tabulating force compiles the annual inventory of materials and stores, listing each of some 13,000 individual items, showing quantity, description, code number, unit price, and total value.

Compiles and maintains personnel records, giving pertinent data concerning approximately 3,600 employees, including the preparation of employees' current address lists and platform employees' seniority lists.

Compiles currently a large volume of statistical information for use in connection with the preparation of the annual budget.

It is contemplated to make further use of this tabulating machine equipment on accident statistics and on such other work as experience shows advantageous to assign to it.

Thirty-Six and One-Half Years Operation:

The Municipal Railway on June 30, 1949, had completed thirty-six and one-half years of operation, the past four and three-quarters years being consolidated operation with the acquired properties of the former Market Street Railway Company.

The total income from the start of operations on December 28, 1912, to June 30, 1949, amounted to $236,289,466, which included $5,481,000 received from sale of 1913 bond issue, $8,480,947 from the sale of the 1947 Rehabilitation bond issue, $1,950,000 from the 1947 Refinancing bond issue, $45,662 accrued interest and premium on the 1947 Refinancing and Rehabilitation bond issues, $4,741,705 contributed, $718,673 interest on bonds owned and on daily cash balances, $70,230 received as a subsidy from the State Board of Harbor Commissioners, and $425,581 miscellaneous profit and loss items. Also included in the total income is the amount of $25,400,019 which represents the excess of the historical cost over purchase cost of the acquired Market Street Railway Company properties. Passenger revenue and other revenue totaled $188,975,649.

The total expenditures other than capital expenditures from the start of operations on December 28, 1912, to June 30, 1949, were $170,093,521, of which operating expenses amounted to $155,458,192, bond interest charges $4,762,935, interest during acquisition $397,159, payments for injuries and damages $8,800,-159, taxes $75,465, retirement charges $445,942, and miscellaneous profit and loss charges $153,669.

The net profit from operations in the thirty-six and one-half years of operation totals $1,903,243. This amount, plus the amount of $4,741,705 contributed $8,480,947 from the 1947 Rehabilitation Bond Fund, less $625,758 interest and redemption on the 1947 Rehabilitation bonds, making a total surplus of $14,-500,137 as of June 30, 1949.

Bonds totaling $5,081,000 were retired out of a total of $5,481,000 issued in 1913. Redemption of the 1947 Refinancing and Rehabilitation bond issues totaled $534,000.

Of the amount of $59,423,751, representing plant and equipment based on historical cost and placed in service since December 28, 1912, $19,274,980 was derived from earnings, the amount of $4,741,705 was derived from taxes and contributions, $10,007,047 from unpaid bond fund sources, and the balance or $25,400,019 represents the excess of historical cost over price paid for the acquired Market Street Railway Company properties.

Road and equipment retired based on historical cost totaled $15,342,307, of which $14,247,773 was charged to the depreciation reserve, and $1,094,534 charged to operating expense or salvaged. This leaves a balance of road and equipment on hand and in use, based on historical cost as of June 30, 1949, in the amount of $44,081,444.

On June 30, 1949, net cash, receivables, and stores on hand, after deducting all liabilities with the exception of $10,631,519 outstanding bonds for Plant in Service, resulted in net free assets in the amount of $2,206,065. This compares with net free assets of $1,575,383, shown on June 30, 1948, an increase of $630,682.

During the thirty-six and one-half years of operation, the Municipal Railway carried 4,065,696,591 passengers. Passenger coach and car miles operated totaled 411,853,448, and car and coach hours operated totaled 43,479,432.

Financial Results of Operation, Fiscal Year Ended June 30, 1949:

OPERATING REVENUES

Operating revenues for the fiscal year ended June 30, 1949, amounted to $18,592,096, as compared with $18,321,582 in the previous year, an increase of $270,514. This increase reflects the effect of the fare increase on January 26, 1949, which offsets the decrease in revenue riders of approximately 5 per cent.

NON-OPERATING INCOME

Non-operating income for the year amounted to $77,090.69, an increase of $27,242 over the previous year. Non-operating income consists principally of amounts received from sales of scrap and worn-out equipment and interest received on cash balances.

OPERATING EXPENSES

Operating expenses, not including the provisions for depreciation and accidents, totaled $17,812,208, as compared with $17,076,471, an increase of $735,737 over the previous year.

Wage increases in the year ended June 30, 1949, including the platform wage increase from $1.368 to $1.484 per hour, added approximately $900,000 to the railway costs for the year.

The cost of gasoline exceeded the previous year's total by $508,870, of which approximately 5 per cent is due to increased fuel cost, and the balance to increased usage.

Electric power cost decreased in the amount of $240,109, principally through decreased usage.

Net increases and decreases for the year in other items entering into the total of the operating expenses amounted to a decrease of $433,024.

PROVISION FOR DEPRECIATION

The amount of $1,450,311 charged to income for a provision for depreciation was determined by the appraisal of Municipal Railway properties as at June 30, 1948, prepared by the Controller.

The amount charged for the year exceeded the amount charged in the previous year by $362,470.

PROVISION FOR ACCIDENTS

The amount of provision for accidents charged to income and credited to the "Accident Reserve" was set at 7½ per cent of the gross passenger revenue.

The amount of $1,384,234 charged to provision for accidents during the fiscal year 1948-49 was an increase of $22,378 over the amount charged in the previous year.

INTEREST PAID

Total interest paid during the year amounted to $260,682. Of this amount, $153,487 was charged to interest during construction to be capitalized, and $107,195 was charged to expense. The amount charged to expense in this fiscal year was an increase of $11,743 over the previous year.

TAXES

Taxes paid on land in San Mateo County amounted to $21,018, an increase of $3,465.

RETIREMENT CHARGES

Retirement charges for the fiscal year 1948-49 amounted to $202,054. This amount is the loss resulting from the retirement of plant and equipment based on historical cost totaling $8,385,146, of which $7,784,252 is applicable to acquired Market Street Railway Company properties and $600,894 to original Municipal Railway properties.

NET LOSS

The net loss for the fiscal year ended June 30, 1949, after provision for accidents, depreciation, and retirement charges, amounts to $2,307,833, as compared with $1,507,837 in the previous year.

While operating revenues increased in the amount of $270,514, due entirely to the fare increase in effect for 5½ months of the year, operating expenses and other charges increased in a greater amount, resulting in a net loss of $2,307,833, or $799,996 greater than the previous year.

Items entering into the increased operating and other costs for the year are noted as follows:

Increased cost due to wage and salary increases of approximately $900,000, an increase of $508,870 for gasoline less a decrease of $240,109 for electric power, an increase of $362,470 in the provision for depreciation, and an increase in the provision for accidents of $22,378.

As the net increase in the above items alone total $1,553,609 over the previous year and after taking into account the $270,514 increased revenue, the fact that the increase in net loss for the year is but $799.996 shows that other economies effected have totaled $483,009.

Expenses Per Car Hour
Mileage and Hours Operated:

Operating expense per car hour, not including reserves for depreciation and accidents or interest charges, was $6.80 for electric street cars, $8.58 for cable

cars, $4.38 for motor coaches, and $4.21 for trolley coaches. Like figures for the previous year were $6.34 for electric street cars, $7.26 for cable cars, $4.15 for motor coaches, and $3.41 for trolley coaches.

Total expense per car hour, including all charges, was $7.74 for electric street cars, $9.46 for cable cars, $5.24 for motor coaches, and $5.12 for trolley coaches. Like charges for the previous year were $7.27 for electric street cars, $8.48 for cable cars, $4.78 for motor coaches, and $4.15 for trolley coaches.

System costs per hour for all types of operation were $5.37 for operating expense and $6.26 for all charges. The previous year showed $5.43 for operating expense and $6.25 for all charges.

The total mileage operated by Municipal Railway cars and coaches during the year was 30,476,886, as compared with 29,066,859 miles in the previous year, an increase of 1,410,027, or 4.85 per cent. Electric street cars operated 10,821,122 miles, cable cars 435,824 miles, motor coaches 17,233,416 miles, and trolley coaches 1,986,524 miles. As compared with the mileage operated in the previous year, electric street car mileage operated decreased 4,709,434 miles, cable car mileage decreased 600 miles, motor coaches increased 5,465,531 miles, and trolley coaches increased 654,530 miles.

Car and coach hours operated totaled 3,316,378 for the year as compared with 3,143,524 in the previous year, an increase of 172,854 hours, or 5.50 per cent.

Electric street cars operated 1,230,066 hours, cable cars 82,002 hours, motor coaches 1,780,877 hours, and trolley coaches 223,433 hours. As compared with the previous year, electric street cars operated decreased 538,813 hours, cable car hours increased 10 hours, motor coaches increased 631,760 hours, and trolley coaches increased 79,897 hours.

Passengers Carried:

The total passengers carried on cars and coaches during the year were 298,475,999 as compared with 307,975,046 in 1947-48, 314,623,064 in 1946-47, 326,007,393 in 1945-46, 295,306,166 in 1944-45, and 167,348,356 in 1943-44. A like figure for the prewar year 1940-41, before consolidation with the Market Street Railway Company, was 108,822,011.

Total passengers carried during the year by types of service were 135,678,690 on electric street cars, 10,180,954 on cable cars, 133,399,209 on motor coaches, and 19,217,146 on trolley coaches.

These figures on total passengers carried, as compared with the previous year, represent a decrease of 67,579,945 for electric street cars, an increase of 287,604 for cable cars, an increase of 49,513,541 for motor coaches, and an increase of 8,279,753 for trolley coaches.

Revenue passengers carried during the year by cars and coaches totaled 206,024,423 as compared with 216,788,454 in the previous year, a decrease of 10,764,031.

Revenue passengers carried by types of service for the year were 99,542,945 for electric street cars, 6,611,577 for cable cars, 87,121,528 for motor coaches, and 12,748,373 for trolley coaches. As compared with the previous year, electric street cars showed a decrease of 50,226,991, cable cars an increase of 103,500, motor coaches an increase of 34,506,736, and trolley coaches an increase of 4,852,724.

Passenger Receipts:

Owing to the consolidation and to changes in the rates of fare from 5 cents to 7 cents on September 29, 1944, from 7 cents to 10 cents cash, or 8⅓c token rate on May 20, 1946, and to a straight 10 cent fare on January 26, 1949, financial and operating figures for the past year as compared with the previous year and prior years will show abnormal differences and will not reflect a true picture of the street railway transportation business of the city.

The rate of fare of 10 cents cash, or 8⅓ cents token rate, was in effect during the year to January 25, 1949. On January 26, 1949, the fare structure was changed to a straight 10 cent fare, and the 8⅓ cent token rate discontinued.

Passenger revenue for the year amounted to $18,456,459, as compared with the previous year's figure of $18,171,522, an increase of $284,937, or 1.57 per cent. The record passenger receipts for a single day occurred on May 26, 1949, and amounted to $65,780.87. A comparison of the daily average passenger receipts for the past five fiscal years is given below:

DAILY AVERAGE PASSENGER RECEIPTS

	1948-1949 1948	1947-1948 1947	1946-1947 1946	1945-1946 1945	1944-1945 1944
July	47,647	50,106	52,153	48,526	18,680
August	48,185	50,137	52,769	47,850	19,589
September	48,944	50,867	52,876	46,542	19,812
October	48,795	51,376	54,747	48,274	48,908
November	47,975	49,183	52,253	46,010	47,483
December	47,915	50,407	52,110	44,409	46,781
Daily Average					19,360*
July to December	48,211	50,349	52,832	46,942	47,724†
	1949	1948	1947	1946	1945
January	46,855§	48,387	50,506	45,174	46,004
February	52,070	46,888	51,700	44,723	47,649
March	54,975	49,654	51,316	46,116	48,385
April	55,718	48,733	53,000	47,333	48,455
May	52,285	47,496	50,987	49,831¶	49,476
June	53,533	49,897	49,688	55,874	51,137
Daily Average January to June	52,558	48,518	51,190	48,152	48,518
Daily Average July 1 to June 30	50,366	49,439	52,011	47,540	48,253‡

*Average July 1, 1944, to September 28, 1944.
†Average September 29, 1944, to December 31, 1944.
‡Average September 29, to June 30, 1945.
¶Rate of Fare Increased from 7c to 10c cash, or 8⅓c Token Rate on May 20, 1946.
§Rate of Fare Increased from 10c Cash, or 8⅓c Token Rate to 10c Cash on January 26, 1949.

Cash and Token Fares
Receipts per Hour:

Passenger receipts per hour for cash and token fares only, and exclusive of school ticket fares, for the past year were $7.02 for electric street cars as compared with $6.95 in 1947-48, $6.70 in 1946-47, $6.14 in 1945-46, $6.17 in 1944-45, $5.58 in 1943-44, $5.06 in 1942-43, and $4.33 in 1941-42.

For cable cars the like figure per hour was $7.13 as compared with $6.62 in 1947-48, $5.89 in 1946-47, $5.20 in 1945-46, and $6.23 in 1944-45, no other previous years' comparisons being available.

The motor coach figures were $4.31 per hour as compared with $3.74 in 1947-48, $3.66 in 1946-47, $3.20 per hour in 1945-46, $3.16 per hour in 1944-45, $2.71 in 1943-44, $2.22 in 1942-43, and $1.78 in 1941-42.

Trolley coaches showed $5.10 per hour as compared with $4.49 in 1947-48, $4.44 in 1946-47, $4.40 in 1945-46, $4.86 in 1944-45, $4.86 in 1943-44, $4.13 in 1942-43, and $3.30 in 1941-42.

The gross receipts from all sources per hour operated for cars and coaches combined were $5.63 in the year 1948-49, $5.84 in 1947-48, $5.85 in 1946-47, $5.43 in 1945-46, $5.65 in 1944-45, $5.26 in 1943-44, $4.73 in 1942-43, and $4.02 in 1941-42.

In reviewing all the above figures on receipts per hour, consideration must be given to the fare rates existing in respective years.

Maintenance of Track and Roadway:

Expenditures for track and paving repairs under maintenance for the year totaled $558,052.12, which total included cost of removals of abandoned track by Municipal Railway forces at miscellaneous locations in the amount of $23,708.80.

Included in the above totals are the costs for cable car track and paving repairs, which costs were considerably high due to the over-age and worn-out condition of the tracks which are in urgent need of major replacement.

Cable car track and paving repairs for the year amounted to $126,996.03, and removal costs totaled $318.12.

During the year, in addition to regular maintenance work for track repairs and maintenance, the track forces performed several jobs of minor track construction or replacement, as well as a number of small track and crossing removal jobs. The new construction work performed, together with the several replacements of crossings, special work, tracks, and paving totaled $77,167.58, while the track removal work amounted to $23,708.80.

As a result of the many conversions made from electric street car to motor or trolley coach operation, a great decrease has taken place in operated electric street car single track mileage.

After July 3, 1949, the operated electric street car single track mileage, including sidings, turnouts, and car house tracks, totaled 87.625 miles as compared with the figure of 222.534 a year previous on June 30, 1948.

Operated single track cable car mileage on July 3, 1949, was 6.792, the same as the year previous.

NO SERVICE STOPPAGE
Relocating tracks and overhead on Geary Street did not interrupt regular service.

The track employee force on June 30, 1949, totaled 151 employees, a reduction of 55 employees from June 30, 1948.

Under maintenance minor new construction and replacements during the year, 18,985 lineal feet of track were reconstructed, and 67,942 square feet of concrete paving base seven inches deep were placed.

Asphalt paving renewed totaled 356,287 square feet at a total cost of $63,820.54.

In the thermit welding process of repairing broken rails, welds totaling 970 were made under general maintenance.

Track repairs were made at 499 locations.

The above figures do not include the work performed by private contractors on two major track reconstruction jobs and on the Market Street outer track removal from Geary Street to Valencia Street. These jobs are mentioned below.

Major Track Reconstruction Market Street Outer Track Removal:

Two major jobs of track construction and reconstruction were performed during the year by private contractors as noted below.

One job performed under Bond Fund E & B Job No. 3010—Contract No. 330, covered the reconstruction of tracks at Geary and Market streets, including the

removal of the connection of the Geary Street tracks with the outer tracks on Market Street and the installation of tracks connecting the Geary Street tracks with the inner Market Street tracks. The estimated cost of the work amounts to $50,262 with actual costs not available as of June 30, 1949.

Another track reconstruction job was performed under Replacement Job No. 1769. This job covered the replacement and relocation of tracks and overhead facilities on Geary Street from Broderick Street to Masonic Avenue. The work was completed, but actual costs were incomplete as of June 30, 1949. The total estimated cost amounts to $174,250.

Under Bond Fund E & B Job No. 3009—Contract No. 308, the outer tracks on Market Street from Geary Street to Valencia Street were removed, and the street repaved. The work included the removal of a branchoff at Eddy and Market streets and the replacing with straight rail in the inner tracks, as well as the construction of a cross-over between the inner tracks on Market Street between Ninth and Tenth streets.

The work was completed in June, 1949, but actual costs were not available as of that date. The contract also covered work to be paid for by the Department of Public Works from the 1947 Street Improvement Bond Fund.

The total estimated cost was $317,122.50, of which the railway's proportion was estimated at $159,240.

The quantities of work performed under the above three jobs, paid for by the railway, were as follows:

Asphalt paving on concrete base	212,000 square feet
Single track construction	4,660 lineal "
Thermit welds made	167

Maintenance Jobs:

Various small maintenance jobs were performed during the year, and the cost of same charged to operations. Of the total amount of $31,090.19 expended, the amount of $20,445.61 was applicable to plant and equipment removals, retirements and abandonments as noted in the following statement:

STATEMENT OF EXPENDITURES FOR MAINTENANCE JOBS

Amount expended 1946-47—Maintenance Jobs in Progress July 1, 1948	$ 30.50
Amount expended 1947-48—Maintenance Jobs in Progress July 1, 1948	3,498.18
Amount expended 1948-49—Maintenance Jobs	27,561.51
Total	$31,090.19

A summarization of the work performed making up this total is as follows:

Track Repairs and Reconstruction	$ 228.06
Track Removals	4,557.43
Overhead, Poles and Feeders, Repairs and Reconstruction	1,026.00
Overhead, Poles and Feeders, Cost of Removals	5,955.58
Dismantling Retired Cars and Equipment	9,668.43
Dismantling Retired Buildings and Structures	264.17
Building Repairs and Improvements	7,131.62
Equipment Repairs and Improvements	606.90
Maintenance of Right of Ways	1,652.00
Total	$31,090.19

New Construction and Additions:

The following statement details the amounts expended from the railway operating fund for additions, betterments, and new construction. These expenditures are principally for minor, miscellaneous construction jobs, as the major expenditures for plant and equipment, construction and replacement were provided from the 1947 Rehabilitation Bond Fund and the railway Replacement and Reconstruction Fund as detailed elsewhere in this report.

STATEMENT OF EXPENDITURES FROM OPERATING FUND OR CONTRIBUTED FOR ADDITIONS, BETTERMENTS, AND NEW CONSTRUCTION

Amount expended 1947-48—Extension and Betterment and Construction Jobs in Progress July 1, 1948	$ 331.42
Amount expended 1948-49—Extension and Betterment and Construction Jobs, and Direct Charges to Road and Equipment	48,501.66
Total	$48,833.08

A summarization of the work performed and equipment purchased making up this total is as follows:

Track construction	$16,768.53
Radio and Headway Recorder installation	21.50
Life Guard Fenders on street cars	9,246.11
Convenience and waiting stations	230.93
Buildings, shops and garages	1,498.96
Track signals and lights	439.45
Pole installations	269.50
Feeders and negative returns	5,050.21
Underground cable	877.94
Servicing, inspection and California Use Tax on Trolley Coaches	13,517.67
Trolley coach overhead switches and turnouts	848.75
Miscellaneous shop and garage equipment (1947-48 audit adjustment)	*183.42*
Miscellaneous office furniture	246.95
Total	$48,833.08

Reconstruction and Replacements:

During the fiscal year 1948-49, ten old street cars were replaced by ten new P. C. C. type street cars at a cost of $278,187.

Of the amount of $128,174 expended on track reconstruction and replacements, $67,775 represented materials used in the reconstruction of the inner tracks on Market Street from Eddy Street to Valencia Street. Complete costs of the Market Street Reconstruction are discussed elsewhere in this report under caption "Major Track Reconstruction." The balance in the amount of $60,399 was expended in the reconstruction and replacement of tracks at some forty locations throughout the system.

A complete statement of all replacement jobs performed during the year, plus jobs in progress at the beginning of the year, follows:

Italic figures denote loss and deficiency.

STATEMENT OF EXPENDITURES FOR RECONSTRUCTION AND REPLACEMENTS

Amount expended 1947-48—Replacement Jobs in Progress—Reconstruction and Replacement Fund—July 1, 1948	$ 52,625.85
Amount expended 1947-48—Replacement Jobs in Progress—Operating Fund, July 1, 1948	2,784.77
Amount expended 1948-49—Reconstruction and Replacement Fund	314,279.44
Amount expended 1948-49—Operating Fund Replacements	51,275.33
Turn-in value received on Replacement Jobs 1948-49	45.00
Total	$421,010.39

A summarization of expenditures for reconstruction and replacements making up this total is as follows:

Track reconstruction and replacements	$128,173.89
Overhead and pole replacements	8,046.85
Street cars—replacements	278,186.83
Service trucks—replacements (additional charges)	588.64
Office furniture replacements	141.96
Coin counting machines	5,822.00
Garage equipment	50.22
Total	$421,010.39

Capital Expenditures from 1947 Rehabilitation Bond Fund Transferred to Plant in Service:

The statement following details the amount of $8,480,947.43 transferred from the 1947 Rehabilitation Bond Fund to Plant in Service as of June 30, 1949.

The major items making up this total were the cost of 259 motor coaches totaling $4,214,609.43 and 190 trolley coaches amounting to $3,739,902.22.

New fare boxes and parts purchased totaled $40,647.13. The inner track replacement on Market Street from Eddy to Valencia Street amounted to $329,337.82, of which $261,562.98 was paid from the 1947 bond fund and $67,774.84 was provided from the railway Reconstruction and Replacement Fund.

Also expended from the bond fund was the amount of $98,532.05 for land for the Presidio trolley coach yard.

In another section of this report will be found allocations for expenditures for equipment and transit facilities totaling $17,464,422, which is the amount appropriated to June 30, 1949, from the $20,000,000 1947 Rehabilitation Bond Fund.

The construction costs of the Ocean garage and bus yard, in the amount of $762,054.88, and of the Fillmore-Sixteenth streets trolley coach overhead, in the amount of $211,541.89, were transferred to Plant in Service during the month of July, 1949, and are not included in the following statement.

STATEMENT OF EXPENDITURES FOR ADDITIONS AND BETTERMENTS TRANSFERRED TO PLANT IN SERVICE

From 1947 Rehabilitation Bond Fund

Transferred during the fiscal year 1947-48	$1,855,493.95
Transferred during the fiscal year 1948-49	6,625,453.48
Total	$8,480,947.43

A summarization of the work performed and equipment purchased making up the total is as follows:

1947-48		
115 motor coaches		$1,855,493.95
1948-49		
144 motor coaches	$2,332,155.30	
8 replacement engines and 3 replacement transmissions for motor coaches	26,960.18	
190 trolley coaches	3,738,347.30	
1 replacement control for trolley coaches	1,554.92	
Fare boxes and motor units	40,647.13	
Reconstruction of inner tracks on Market Street — Eddy Street to Valencia Street	261,562.98	
Land purchase for Presidio trolley coach yard	98,532.05	
Conversion of McAllister Street car house to a bus yard	14,133.87	
Construction of fence at Kirkland yard	2,142.99	
Car house, garage and shop equipment	109,416.76	
Total 1948-49		6,625,453.48
Total transferred to Plant in Service		$8,480,947.43

Maintenance of Equipment:

During the year the equipment of the original Municipal Railway cars was maintained in excellent condition, and such cars as remained and were in operation from the Market Street Railway Company purchase were maintained in fair operating condition.

The usual policy of cleaning cars daily and of disinfecting weekly was maintained throughout the year.

A total of 75 car bodies was overhauled and painted, 62 cars were rewheeled, 1,326 motors were repaired, and 3,457 pieces of electrical apparatus and 62 truck units were overhauled. A total of 267 propulsion armatures and 155 air compressor armatures were rewound.

During the year, 2 cable cars, 75 electric cars, 73 buses, 12 trucks, 6 autos, 2 motorcycles, 2 work cars and 1 trailer were repainted. Eighty-four electric cars, 8 cable cars, 43 trolley coaches, and 103 buses involved in accidents were touched up.

Other painting work performed included 21 waiting stations, 4,368 destination signs which were made for various lines, 1,789 parade poster frames, 457 dash signs, 6 telephone boxes, and a great number of miscellaneous items.

OVERHEAD
Trolley coaches require double lines overhead.

The brass foundry turned out 80,053 pounds of castings for the thousands of castings that were manufactured.

The mill ran 60,683 feet of lumber, and the special machine shop made and repaired 11,466 track tools and cut and fabricated 406 pieces of rail for various special work, and made up 9,526 miscellaneous rail and track parts.

The machine shop, in addition to repairing and manufacturing thousands of parts for street cars, cable cars, trolley coaches, and motor coaches, made 96 new axles and 21 armature shafts, and placed 504 car wheels on axles.

The fare box department serviced 4,663 fare boxes, changed the coin plates on 922 fare boxes, and converted from manual to electrical operation 283 fare boxes.

The fender repair shop repaired 1,510 old type fenders and 11 life guard fenders. New life guard fenders were installed on 55 additional cars, making a total of 85 cars now equipped.

The car building department repaired 84 street cars, 103 motor coaches, and 43 trolley coaches.

At a cost of $3,738,347.30, 190 new trolley coaches were received for use in connection with the conversion of various lines, and all were assigned to the new Potrero trolley coach division.

PAINT JOB
Attractive vehicles please railway patrons.

Ten new modern P. C. C. type street cars, purchased at a cost of $278,186.83, were received and placed in service, as well as 144 motor coaches, which were purchased at a cost of $2,332,155.30.

During the year, 216 old street cars and 14 motor coaches acquired in the Market Street Railway Company purchase were disposed of through public sale.

The railway is covered by fire insurance on the acquired Market Street Railway Company's street cars, miscellaneous buildings and plant, and on all motor coaches, trolley coaches, and automobiles owned by the railway. During the year, billing was made to insurance carriers for fire damage as follows:

BILLINGS FOR FIRE DAMAGE
July 1, 1948, to June 30, 1949

Date of Fire	Equipment Damaged	Billing for Damage
8/12/48	Motor coach No. 046	$ 708.00
2/ 2/49	Sutro waiting station	1,500.00
2/ 6/49	Street car No. 929	182.83
	Total	$2,390.83

Garage and Motor Coach Maintenance, Garage Improvements:

Following is a general summary of work pertaining to motor coach maintenance and garage improvements during the year July 1, 1948, to July 1, 1949:

UNITS RECONDITIONED AND INSTALLED

Various coach and engine components, such as indicated hereinafter, were thoroughly reconditioned in the unit repair department at Twenty-fourth and Utah streets garage and subsequently installed on serviceable vehicles:

Air compressors	250
Carburetors	466
Clutch assemblies	674
Cylinder head assemblies	144
Differential assemblies	294
Distributors	1,917
Engines—GMC	7
Hall-Scott	8
White	97
Service cars and trucks	13
By GMC Co.	51
Front axle assemblies	75
Fuel pumps	309
Generators and alternators	262
Generator regulators	319
Miscellaneous air units (governors, regulators, ejector valves, wipers and valves, safety valves)	620
Miscellaneous door controls (door engines, shut-off valves, control valves, divider valves, magnetic valves, control switches, relays, treadles, sensitive edges)	942
Miscellaneous brake controls (master valves, relay valves, quick release valves, slack adjusters)	1,087
Miscellaneous electrical units (choke solenoids, shut-off solenoids, transmission hi-lo switches, horns, ignition and wiring harness, transmission relays and solenoids, stop-lite switches, starter solenoids and switches, buzzers and switches, bells)	1,036
Miscellaneous engine accessories (de-gassers, dip governors and cylinders, engine governors, butterfly assemblies, slave valves, master throttle valves, heat senders, alarmastats)	467
Starters	417
Steer gear assemblies	15
Transmissions	294
Transmission shift towers	32
Transmission governors	1,557
Water pumps	142

GENERAL REPAIRS

General running repairs, unit installations, minor repairs and adjustments approximating 50,000 individual job operations were performed at the various garages as itemized on the daily work registers. In this summary, work such as the following is noted:

Brake sets relined, including machining and grinding drums in most instances	1,306
Clutches reconditioned	747
Engines semi-overhauled	45
Engine valve sets reconditioned	48
Chassis springs changed	223

STORAGE BATTERIES

Supplementing daily storage battery service, the following totals indicate batteries assembled as new units or repaired to serviceable condition. Many components are manufactured on premises and all the lead used in these parts has been obtained by smelting salvageable material on hand. To expedite this work, the battery department has been renovated, ventilation and lighting improved, and miscellaneous tools such as dies, molds, and lead furnace procured. Repair work usually includes renewing insulation, separators, cell connectors, posts, covers, straps, terminals or cables.

Batteries constructed	307
Batteries repaired	421
Batteries damaged in accidents	167
Batteries junked	438
Batteries changed	896
Batteries charged	958

MOTOR COACH SERVICE ACTIVITIES

Service pit operations, including regularly scheduled inspection and lubrication, consisted of:

Nightly safety inspection	92,255
2000 mile minor mechanical inspection	2,990
4000 mile major mechanical inspection	2,848

Supplementing regular daily sweeping, glass cleaning, disinfecting, upholstery renovating and chassis steam cleaning, the following work was performed on the wash racks:

Exterior body wash	29,643 units
Interior body wash	4,067 units

BODY REPAIRS

There were approximately 700 accidents wherein coaches were damaged in varying degree of intensity. A total of 258 bodies were repaired or completely rehabilitated to approved condition. Included in this classification of work is the manufacture of many common body fixtures or panels at a saving over vendors' charges. Miscellaneous small tools have been procured throughout the year to assist in this work. Many of the older vehicles, however, are still in need of complete body reconstruction, and the work proceeds as conditions permit.

IMPROVEMENTS AT GARAGES

Due to the temporary nature of the installation, expenditures at the McAllister garage have been kept at a bare minimum. Other than minor structural, property, and yard maintenance, physical improvements have been confined to enlargement of housing for stores. A new electric I.B.M. time-clock, standard in all the railway motor coach garages, was procured to replace an obsolescent device. Because of the poor facilities at this location, maintenance work is confined to inspections and minor repairs only.

Ocean garage facilities as developed by Municipal Railway contracts No. 297 and No. 298 made an excellent structure available in the early part of April, 1949, for complete service, storage, and repairs of 209 motor coaches assigned to that division. Tools, machinery, and miscellaneous equipment are being installed to provide for all running repairs and unit replacements.

Improvements at the Utah division garage have consisted mainly of enlargement of an engine dismantling and parts inspection room. Large size hot dip tanks have been built to provide rapid and thorough parts cleaning facilities. Equipment in unit repair was augmented by an additional align boring bar, cylinder boring tool, reamer drives, rod aligning fixtures, spring measuring devices and other small tools. A work bench, complete with provisions for all tests necessary in the reconditioning of automatic transmission governors, was developed and constructed.

General floor work has been simplified by the addition of a fork lift truck for which many special fixtures have been made to expeditiously handle parts required. Automatic bus washer has been equipped with a roof brush capable of cleaning hitherto inaccessible roofs. Coach parking situation at the Utah division remains critical, but plans are being engineered to alleviate the undesirable condition. Long awaited steel parts bins were received and installed to provide not only good housekeeping methods through systematic parts arrangement, but a more accurate parts control procedure. Garage floor area illumination was accomplished to complete satisfaction by replacement of antiquated DC type fixtures with suitable AC lights and reflectors throughout.

MOTOR COACH EQUIPMENT

New motor coaches, totaling 144, were received on the property since July 1, 1948. These were model 798 White coaches of 44-passenger seating capacity and equipped with the vendor's patented hydro-torque transmission. This device is the most modern and highly developed means of transmitting power and is a combined mechanism of torque converter, hydraulic coupling, and a two-speed synchromesh transmission. It provides automatic gear shifting up or down without the use of a clutch or hand control. In addition to providing smooth acceleration, it allows free use of the operator's hands for other duties, and for safer, more efficient operation. During the period encompassed by this report, 14 obsolescent coaches were retired physically.

Cable Machinery Department:

The activities of the cable machinery department for the year ended June 30, 1949, are detailed as follows:

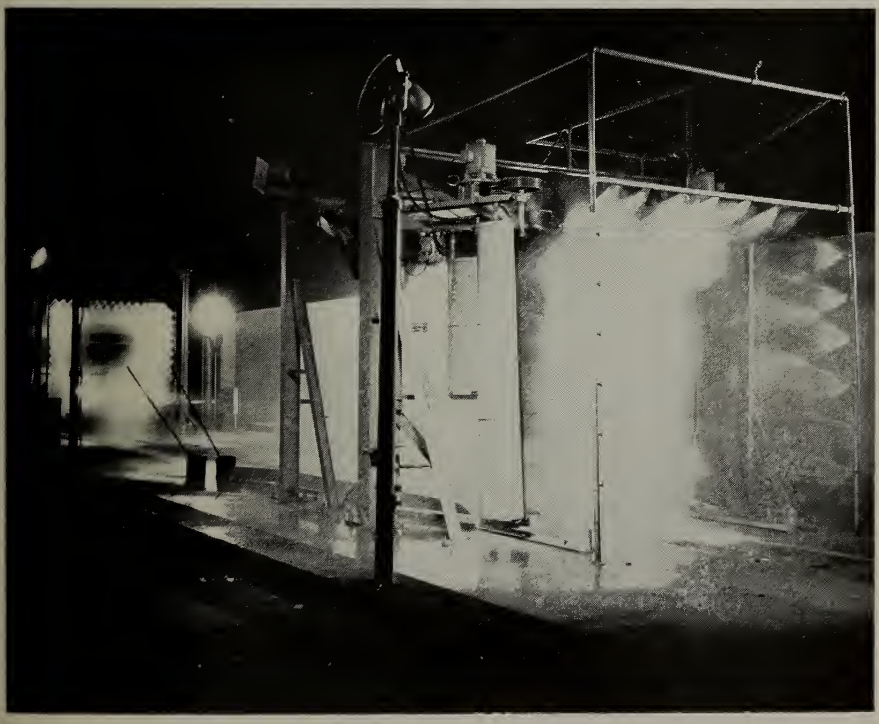
The operating time of the cable machinery department on week days is from 5:58 a.m. to 1:30 a.m., and on Sundays and holidays from 6:19 a.m. to 1:30 a.m.

At the conclusion of the day, the night operating engineers on duty clean motor contacts and magnets on switchboard, inspect cable winder gears and bolts, check motor gears and compound, help on maintenance and installation of cables. Transformers are cleaned and blown out once a month; steam boiler tubes are cleaned on every cable installation. The day operating engineers on duty check bearing shaft temperatures, lubricate machinery, and keep records. Maintenance, installation of new cables, and removal of old cables is done after the close of operation.

Removal and installation of cables during the year ended June 30, 1949, are as follows:

July 14, 1948—Installed new Mason Street cable No. 1005, replacing cable No. 1003, worn out after 84 days of service.

REMODELING
Old street cars got new automatic safety doors.



AUTOMATIC WASHER
Motor buses average two baths each week.

Sept. 9, 1948—Installed new Powell cable No. 1008, replacing cable No. 1006 after it was cut and badly kinked. In service 74 days 8½ hours.

Sept. 25, 1948—Installed new Mason cable No. 1007, replacing No. 1005, worn out after 73 days service.

Dec. 8, 1948—Installed new Powell cable No. 1013, replacing No. 1008, because of a bad strand. In service 90 days.

Dec. 16, 1948—Installed new Jackson cable No. 1009, replacing No. 998, worn out after 231 days service.

Dec. 18, 1948—Installed new Mason cable No. 1012, replacing No. 1007, worn out after 84 days service.

Jan. 29, 1949—Installed new Powell cable No. 1014, replacing No. 1013, it being defective. In service 52 days.

March 12, 1949—Installed new Mason cable No. 1015, replacing No. 1012, worn out after 84 days service.

April 26, 1949—Installed new Powell cable No. 1016, replacing No. 1014, worn out after 87 days service.

INSTALLATION OF CABLE SECTIONS

Nov. 23, 1948—Installed 165 ft. section in Mason cable.
Nov. 30, 1948—Installed 240 ft. section in Powell cable.
Feb. 16, 1949—Installed 175 ft. section in Mason cable.
Mar. 5, 1949—Installed 2,000 ft. section in Mason cable.
Mar. 23, 1949—Installed 250 ft. section in Powell cable.

MAJOR SHUTDOWNS

1948

September 8—Shut down 12:52 p.m.—Powell cable cut at O'Farrell Street. Delay of 11 hours 8 minutes on all cables due to damaging of Powell cable and its replacing.

December 7—Stopped motor at 4:57 p.m. due to stranding of Powell cable. Installed new cable. Started motor at 10:52 a.m. on December 8. Delay of running time 13 hours 25 minutes.

1949 None to June 30.

BUMPERS HIT

Powell Street line.....39
Mason Street line.....11
Jackson line.....46

NEW LAGGING ON WINDERS

July 17, 1948—Installed new lagging on Mason winders. Old lagging in service 280 days and worn out.

Oct. 20, 1948—Installed new lagging on Jackson winders, replacing old lagging in service 461 days, and worn out.

Dec. 7, 1948—Installed new lagging on Powell winders, replacing that in service 396 days and worn out.

Dec. 15, 1948—Installed new lagging on Mason winder, replacing that in service 151 days and worn out.

MAINTENANCE WORK AFTER CLOSE OF OPERATIONS ON CABLES AND ASSOCIATED EQUIPMENT

During the year, necessary maintenance work on pulleys, sheaves, cable winders, the Powell Street turn-table, and miscellaneous facilities, as well as the repairing of cables, such as cutting out old splices, re-splicing, drawing tucks, straightening and similar work, was performed by repair crews after close of operations.

The above maintenance and repair work, together with the work of removing old cables, installing new cables and new lagging on winders, required work by maintenance and repair crews after close of operations on 138 different days.

GRIP BUILDING AND MAINTENANCE

Grips repaired and re-died.....3,300
New grips built..... 83
3,000 grip dies and 166 grip shanks were champered

DAILY MAINTENANCE

The daily maintenance of underground machinery consists of the inspection and lubrication of 14 tail sheaves, 20 stationary pulleys, 46 depression beams, 91 crown pulleys, 200 curve pulleys, and 823 carrying pulleys.

Bumper bars and bells at 8 locations are inspected and overhauled once a week.

The cable machinery shop does the machine work on cast iron carrying pulleys, brass bearings, bushings, steel forgings, and grip parts.

Maintenance of Overhead Lines:

The overhead line department, in addition to the regular and extensive overhead and underground electrical system maintenance and repair, is engaged in many other activities of a related nature or in work which this department is specially equipped to perform.

These additional activities include: lighting repairs and maintenance for tunnels, street car and coach houses and yards, offices, shops, and material yards; making steel brackets and arm gains for trolley poles and beams for pole setting and extending; welding and dressing of worn overhead wire; repairing and rebuilding signal headway recorder and switch parts; repairing fire and telephone circuits; performing tree trimming work; and repairing line service equipment such as auto towers and hoists.

A check is made semi-annually of utilities easements on poles and buildings.

During the year a complete check is made of underground plant and feeders to ascertain leakages or other conditions requiring attention.

The line department attended to 2,079 emergency calls during the year in connection with repairs, maintenance or operation.

While the construction of overhead facilities, in connection with the extensive change-over during the year from electric street car operation to trolley coach operation, was done principally by private contract, the railway overhead line department was called on to perform a considerable amount of work in this connection such as removal of old street car overhead plant, rearrangement of feeders, removal of electric track switches, and related work.

On January 16, 1949, the No. 22 Fillmore line was converted to trolley coach operation, and on July 3, 1949, the No. 5 McAllister, the No. 6 Haight-Masonic, the No. 7 Haight, and the No. 21 Hayes lines were converted to trolley coach operation.

ITEMS OF REGULAR WORK PERFORMED

Block Signals made modern 6
Skip-stop signs installed or moved ..... 19 locations
Picture-taking work ..... 3 cases
Plant transferred to poles (125) eyebolts (30) ..... 155 cases
Joint poles applied for ..... 3 poles
Steel or concrete poles removed ..... 31 poles
Wooden poles removed ..... 6 poles
Poles painted ..... 57 poles
Steel poles extended ..... 51 poles
Sound for badly worn trolley wire ..... 2 miles
Replaced 4/0 grooved trolley wire in Twin Peaks tunnel with new wire. 8,400 feet
Compressor hose and "hot loop" and lights installed for track department ..... 30 locations
Taking care of necessary changes in trolley wire spans, feeders, etc., for house moving jobs ..... 14 locations

ITEMS OF SPECIAL WORK PERFORMED

Removal of overhead wires and spans on Sixth Street from Mission to Bryant Street.

Removal of approximately 1,200 feet of 1,000,000 C.M. feeder cable from No. 11 line—Twenty-fourth Street.

Removal of feeder wire, trolley wire, and span wire on Precita Avenue, Folsom Street to Army Street.

Installation of temporary electric and air connections between source of supply at gas station at Ocean Avenue garage coach yard and pits in new service building.

Installation of 7 floodlights at the Ocean Avenue garage between Geneva and Niagara avenues on San Jose Avenue.

Installation of roof washer on present bus washer at Twenty-fourth Street garage.

Installation of bus washer and floodlights at Mariposa yard.

Removal of overhead feeder, wiring and spans at McAllister Street car house, rearranging the lighting system for the office, and clearing out portion of the plant for the contractor who is to remove the building.

Installation of lights in new pits at McAllister bus garage.

Removal of overhead trolley wire, spans, etc., from all parts of the No. 22 line which were converted to trolley coach operation and de-energizing and rearranging existing feeder cables on pole arms as required from Fillmore and Pacific streets to Eighteenth and Third streets.

Rearranging overhead feeders on Sixteenth Street between Bryant and Church streets and on Fillmore Street between Haight and Turk streets in connection with the conversion of the Fillmore Street No. 22 line to trolley coach operation.

Removal of overhead trolley wires, spans, and pole bands from all parts of the line which were converted to trolley coach operation on the McAllister and Hayes lines west of Franklin Street and rearrangement of certain existing feeder cables as directed by the engineer.

Rearrangement of feeders at Frederick and Ashbury streets, West Portal Sunset tunnel, and Duboce and Fillmore streets account of removal of Haight-Masonic No. 6 line tracks.

On the Haight and Parnassus trolley coach line removed overhead trolley wires, spans and pole bands from all parts of the line which are to be converted to trolley coach operation and rearranged existing feeder cables where such arrangements were unduly complicated and required special knowledge of the installation.

Removal of trolley wires and span wires on Haight Street from Market to Stanyan Street including curve from Stanyan Street into Haight Street.

Removal of overhead trolley wire from the outer tracks on Market Street between Valencia and Sutter streets and on the outer and inner tracks on Market Street between Fremont and The Embarcadero.

Installation of overhead to bus washer at Potrero coach yard.

Installation of left-hand turnout from South Van Ness Avenue to Sixteenth Street.

Cleaning of the portion of the Mission Street duct line between Anthony and Ninth streets.

Rerouting of underground feeder in Fort Mason to new location on Chestnut Street and hauling of poles to storage yard.

Performance of overhead work in connection with the rearrangement of tracks at Market and Church streets including work on electric switches.

Changing of all taps and feeders in connection with the rearrangement of Municipal Railway manholes in accordance with M. R. contract No. 313.

Removal of present overhead installation into outer tracks, and construction of new overhead into inner tracks at Geary and Market streets including work on electric switches.

Installation of 1,000,000 C. M. negative feeder cable on Columbus Avenue between Washington and Union streets.

Fabrication and installation of a manually-operated controller to move the No. 22 trolley line vehicles from the revenue route lines to Seals Stadium parking lane wires.

Installation of a right-hand trolley coach turn-out at Seventeenth and Folsom streets.

Installation of a 500,000 C. M. negative feeder cable on South Van Ness Avenue between Thirteenth and Sixteenth streets.

Adjustment of existing feeder lines to clear city-owned street lighting standards on Bryant Street, south side, between Second and Tenth streets.

Replacement of negative copper cable on Fillmore Street between Ellis and O'Farrell streets damaged by the San Francisco Water Department ditch digger.

Adjustment of existing feeder lines to clear city-owned street lighting standards on Bryant Street, south side, between Second and Tenth streets.

TRACK REMOVAL
Fillmore Street was repaved for trolley buses.

Motive Power Department:

From July 1, 1948, to June 30, 1949, the total power consumption of Municipal Railway substations, including Mason and Washington cable station, was 43,787,520 K.W.H. purchased at a cost of $371,077.72. This energy is purchased as alternating current and converted to direct current by the railway at its substations.

The railway also purchased during the year 35,193,890 K.W.H. of direct current for operation of the original Municipal Railway division at a cost of $404,143.17. The average cost of the alternating current purchased for propulsion was .0085 per K.W.H., while the direct current purchased averaged .01148 per K.W.H. To the alternating current cost of .0085 per K.W.H. should be added our substation conversion cost of .0037 per K.W.H. which will bring the total cost of this energy to .0122 per K.W.H.

The railway also purchased during the year power in the amount of 1,758,672 K.W.H. for use in car and coach houses, shops, and tunnels at a cost of $23,809.36, or an average cost of .01354 per K.W.H.

The total electric energy purchased for all purposes was 80,740,082 K.W.H. at a cost of $799,030.25, or an average cost of .09896 per K.W.H.

This department maintains records of Demand and Watt-hour Meter readings for the compilation of power consumption; operates and maintains power conversion equipment, which is distributed in 6 substations and 1 cable station and

which consists of 16 motor generator sets, 6 rotary converters, 2 cable driving motors, and their auxiliaries and control apparatus. Time rolls for monthly employees of the motive power and cable machinery departments are computed in this office.

Work performed in connection with the maintenance of equipment is detailed as follows:

Semi-annual changing of insulating oil, overhauling contacts and remote control operating mechanism of the 15,000 volt automatic oil circuit breakers and the 11,000 volt oilbreak switches used for operating the converting apparatus and starting compensators.

Annual overhauling of contacts, operating mechanism, and changing of insulating oil of 30-15,000 volt large automatic oil circuit breakers used on the high tension lines supplying the various stations.

Monthly overhauling of contacts on step-by-step voltage regulators used on the 11,000 volt transformers for the rotary converters.

Blowing off every four weeks with compressed air and wiping of the insulators on the 11,000 volt power buses, disconnecting switches, potential and current transformers is done after arrangements are made with the Pacific Gas & Electric Company in order that the owl load can be transferred to different stations to allow for opening of the high tension power lines.

Oil in bearings of all motor generators and rotary converters is replaced with new or filtered oil every three months.

All rotating equipment is blown off with compressed air and wiped daily as soon as taken out of service; switchboard, meters and 600 volt feeder switches and breakers are dusted and wiped on every eight hour shift.

In addition to the above-mentioned routine maintenance, the following work was completed:

Replaced burnt out resistance unit of speed limit device and low voltage relay on generator No. 2 at Geneva substation.

Changed voltage taps on 11 KV transformers at Eighth Avenue substation.

Made test with recording voltmeter at Sutro carhouse to see if Eighth Avenue substation could be shut down until motor coaches operating on McAllister Street were replaced with trolley coaches. Test showed that voltage dropped too low to keep street cars on Sutter and Balboa streets on schedule.

Overhauled contacts and changed oil on 22 oil circuit breakers which had repeatedly relayed and spilled oil due to heavy short circuits and other disturbances on the 11,000 volt distributing network.

Removed covers over field poles and armatures on rotary converters Nos. 1, 2, and 3 at downtown substation and checked connections to collector rings, field coils, and cables; painted armatures, field and interpoles of all three converters; made up copper strip to bolt over broken connection between field poles of starting grids on rotary converter No. 3.

Checked connections to collector rings, interpoles and series fields on converters Nos. 1 and 3 at Eighth Avenue substation, which requires the removal of covers and flash barriers.

Resurfaced with grindstones the commutators on motor generator sets No. 3

and No. 4 at Bryant Street substation which had flashed over due to a heavy short circuit on the high tension lines.

Resurfaced with grindstones commutators on motor generator sets No. 1 and No. 3 at Turk Street substation, and rotary converter No. 1 at Eighth Avenue substation, which had flashed over when power shovel removing car tracks on Fillmore Street came in contact with feeder cables in front of Turk Street substation.

Repainted cables and leads to converters and switchboard at downtown and Eighth Avenue substations.

Overhauled and replaced worn-out oil rings in bearings of 750 H. P. cable driving motor at Mason and Washington cable station.

On October 8, 1948, a breakdown occurred in the armature winding of the 2150 H.P. 11,000 volt motor of M.G. set No. 3 at Geneva Avenue substation, which required the partial dismantling of the machine to replace shorted armature coils.

Replaced worn-out ring gear on over-running clutch of oilswitch mechanism of oilbreak switch on M.G. No. 5 at Bryant Street substation.

Installed new A.C. low voltage relays in place of worn-out relays on rotary converters No. 1 and No. 2 at downtown substation.

Changed cable connection on 440 volt A.C. starting switch of rotary converters No. 1 and No. 2 at Eighth Avenue substation—for safer operation when starting machines.

Changed high voltage taps on transformers of all rotary converters at downtown substation on account of higher supply voltage (12,000 to 12,800) during the early morning hours.

Repaired loose connection on 11 KV power bus at Geneva substation.

Removed 600 volt recording voltmeter from Millbrae substation and installed same at downtown substation.

Replaced two instrument potential transformers which had burnt out on 11 KV line No. 62 at downtown substation.

Replaced open 600 volt knife switches and fuse blocks on air compressors and drill press at Turk Street substation with enclosed type knife switches, also on overhead travelling crane at Bryant Street substation.

Replaced the 56-cell control bus battery with new type exide K.X.H.S.—7 batteries at downtown substation.

Resoldered several loose risers on commutators of motor generator sets No. 2, No. 4 and No. 6 at Bryant Street substation, M. G. sets No. 4 and No. 6 at Turk Street substation and M. G. set No. 3 at Geneva Avenue substation.

Stenciled D.C. feeder numbers on the back of all feeder switchboard panels.

Cleaned and lubricated chart driving mechanism, also inkwell and pens in all four operation recorders at Central Control office.

The equipment department installed railings and guards over gears on the electric traveling crane at Bryant substation to comply with safety rules.

The line department made extensive changes in 600 volt D.C. feeder arrangements at Turk, Bryant, and Eighth Avenue substations due to the change-over from street car to trolley coach operation on several lines.

On January 15, 1949, the San Mateo Suburban Line No. 40 was discontinued, and Millbrae substation was closed permanently. All A.C. equipment was turned over to the Pacific Gas & Electric Company, the owners.

Bureau of Personnel and Safety
Railway Section:

PERSONNEL

The total number of employees as of June 30, 1949, was 3,593, of which number 2,406 were platform employees, 615 shop employees, 151 track employees, and 421 office and supervisory employees. This is a reduction of 35 employees from the total number of employees as of June 30, 1948.

The labor turnover rate dropped from 63 per cent for the fiscal year ended June 30, 1948, to 26 per cent for the fiscal year ended June 30, 1949, a decrease of 37 per cent. This change may be attributed to several factors, foremost among them being: improved selection, placement, training, and supervision, effected by close cooperation between the railway and the Civil Service Commission, and the railway and the Board of Education.

During the year 37 platform men retired through the retirement system: 22 for service, 10 because of age, and 5 for disability. In the same period 30 platform men applied for and received disability transfers to various other positions in the railway and in other city departments; 40 platform employees accepted Civil Service appointments in other classifications within the city service; and 35 men were promoted from conductor and motorman and coach operator classifications to inspector classification.

In the miscellaneous group of employees, which includes shop, track, office, and administrative employees, there was a total of 29 retirements: 18 for age and 11 for service. Also in this miscellaneous group 23 employees accepted appointments in other city departments; 20 were promoted to higher classifications within the railway; and 6 were promoted to higher classifications in other city departments.

During the year, death came to 32 employees of the railway, of which number 20 were platform, 4 shop, 2 track, and 6 office employees.

During the fiscal year, the leave section of the Bureau of Personnel and Safety processed 2,857 leaves for railway employees. These leaves consisted of 1,949 sick leaves with pay, 526 sick leaves without pay, and 356 business leaves. During the same period, military leave with pay was granted to 22 employees, and military leave without pay was granted to 4 employees.

COMPARISON OF NUMBER OF EMPLOYEES

June 30, 1949, with June 30, 1948

	Car and Coach Operators	Shop	Track	Office and Supervisory	Total
Total Employees—June 30, 1949	2,406	615	151	421	3,593
Total Employees—June 30, 1948	2,464	579	206	379	3,628
Increase or Decrease	*58*	36	*55*	42	*35*
Employments During Fiscal Year	481	245	25	159	910
Terminations During Fiscal Year	539	209	80	117	945
Increase or Decrease	*58*	36	*55*	42	*35*

Italic figures denote loss and deficiency.

TRAINING

Due to the great task of training motormen and conductors to operate motor and trolley coaches, instructors devoted a great portion of their time during the fiscal year to training and less time to follow-up work. To further aid in this problem, a Transit Fleet Training Course was instituted in March, 1949.

With the generous sponsorship and cooperation of the San Francisco Unified School District, this program was set up on a voluntary basis. Up to the end of the fiscal year, 859 platform and supervisory employees of the railway submitted applications. Of this number, 395 participated in trolley coach instruction, 247 in motor coach instruction, including road training, and 217 in classroom instruction only. During the year, 140 employees qualified for certificates of completion. This training program is separate from and in addition to the regular railway training program.

The training of motormen, conductors, and coach operators by the instruction department this year has shown a marked decrease in the number of new employees trained as compared with figures of the previous fiscal year. A total of 447 new platform employees was processed and given work assignments. In addition to this number, there were 40 trainees who, for various reasons, failed to complete their training.

During the fiscal year, 609 regular certified employees were given training on motor and trolley coaches. This increased training program was necessary because of the conversion from two-man electric car operation to one-man trolley and motor coach operation.

In addition to the instructional and training phases of this department, a constant program of follow-up was carried on whereby contacts were made on 20,267 occasions, 3,088 being with conductors, 7,518 with motormen, 8,031 with motor coach operators, and 1,630 with trolley coach operators. Primarily, follow-up covers both safety and public relations.

EMPLOYEES TRAINED IN FISCAL YEAR ENDED JUNE 30, 1949

	Motormen	Conductors	Motor Coach Operators	Trolley Coach Operators	Total
Employees completing training—Fiscal Year	155	89	175	28	447
Employees failing to complete training—Fiscal Year	19	6	13	2	40
Motormen and Conductors transferring to motor and trolley coach operators	...	...	328	281	609
Total employees processed	174	95	516	311	1,096
Follow-ups—Additional Instruction: Number of contacts	7,518	3,088	8,031	1,630	20,267

SAFETY

Operating accidents, which include those of traffic, passenger, and certain miscellaneous types, totaled 8,610, which was 1,140 or 12 per cent less than those of the previous fiscal year. This total does not include broken windows, unusual occurrences, or employee accidents.

A substantial decrease in employee accidents is worth noting, showing 171 or 18 per cent less than those of the previous fiscal year. This decline in accident occurrences is attributable to several factors among which are:

1. The higher standard of acceptance requirements, both physical and mental, as instituted by the Civil Service Commission in supplying the railway with better qualified personnel.

2. The eventual disposition of below standard equipment and its replacement by up-to-date vehicles.

3. Standardization of instructional and training procedures.

Whereas mileage, which can be considered the exposure factor, has increased five per cent, a decrease of 8 per cent was registered in traffic accidents. Passenger accidents likewise show a decrease of 6 per cent, while the number of passengers carried dropped only 5 per cent. In comparing our performance with that of other major transit organizations throughout the nation, there is reason to be proud of the fact that the railway is doing as well as, if not better than, the national averages indicate.

Some notable achievements made during the fiscal year are as follows:

1. Accomplishment of a more thorough understanding of the accident problem and the institution of proper correctional steps necessary, as determined through the review of all accidents by the accident committee.

2. Institution of a systematic method of accumulating accident data by the use of mechanical tabulation, thereby assuring accurate analysis.

3. The emphasis placed on the necessity for physical fitness of operating personnel and the splendid cooperation of the retirement board in this respect.

4. The personal recognition given to ideas for improvement of the service, submitted by employees to this bureau, and the adoption of many of these suggestions.

Items of merit contemplated for the 1949-50 fiscal year are worthy of mention:

1. Membership in the National Safety Council, which will enable the railway to benefit in a safety program that reaches all individuals.

2. Creation of an Accident Interview Committee, which will deal only with cases which warrant correction due to a repetition of incidents.

Bureau of Claims:

The constant efforts of the Bureau of Personnel and Safety, in conjunction with the Bureau of Claims, through personal contact with, and safety education of, employees, have resulted in a marked decrease in accident occurrences in the fiscal year ended June 30, 1949, as compared with the previous three years. Noted below is a tabulation of accident occurrences and total accident costs for the past four fiscal years ended June 30.

Year	Accident Occurrences	Total Payments and Costs
July 1, 1945, to June 30, 1946	*16,127	$1,051,996
July 1, 1946, to June 30, 1947	*13,869	1,531,548
July 1, 1947, to June 30, 1948	*11,502	1,361,856
July 1, 1948, to June 30, 1949	*10,877	1,566,342

*Above accident occurrence figures include employee accidents, reports of broken windows, and accidents reported as "unusual occurrences."

This tabulation shows a reduction in accident occurrences in 1948-49 of 625, or 5.43 per cent under 1947-48, a decrease of 2,992, or 21.57 per cent under 1946-47, and a decrease of 5,250, or 32.55 per cent under 1945-46.

The net amount expended during the year for accident payments and costs, totaling $1,566,342, provided for the disposition of a considerable number of old accident cases, the allocation of costs to the years in which the accidents occurred being as follows.

Fiscal Year	Amount of Payments and Costs
1948-1949*	$ 606,605
1947-1948	337,902
1946-1947	298,635
Prior Years	323,200
Total	$1,566,342

The total number of claims filed during the fiscal year 1948-49 was 3,878 as compared with the previous year's total of 3,573, an increase of 305 claims filed over the fiscal year 1947-48.

Accident payments and costs should materially decrease in future periods on account of the lessening of occurrences due to safety educational efforts, the increased use of new and modernized passenger equipment with safety doors, and to the number of old claims that have now been settled.

As a measure of protection against the liability for large accident payments, arising from a single accident, the railway carries insurance coverage in the form of an "Excess Public Liability and Property Damage" policy. This policy affords protection for the excess cost of any single accident occurrence over $37,500 and up to $500,000 and does not limit the number of occurrences.

Since May 1, 1945, to August 31, 1949, the premiums paid on excess liability accident coverage have amounted to $182,416, while amounts paid by the insurance carriers, in connection with railway accidents, have totaled $376,158, with a continued liability by the insurance carriers for payments on accidents occurring during the policy periods which have not as yet been settled.

The annual report of the Bureau of Claims containing statistics pertinent to claims and accident costs will be found in the following pages of this report.

Collections for Damages to Railway Property:

The policy of collecting for damages to Municipal Railway property from motorists and others liable therefor was instituted on August 1, 1941. In the past year, this policy was extended to include reimbursement to the railway from parties ascertained to be liable for accidents for which the railway paid amounts for personal injuries and damages.

*The amount allocated to the fiscal year 1948-49 included salaries of the Bureau of Claims and of the City Attorney's office, amounting to $230,993.22, and the amount of $61,090.89, premium on an Excess Liability Insurance policy.

END OF LINE
Retirement of 216 old street cars during year was possible because of new equipment.

The following is a summary of collections made by fiscal years since the inception of this procedure:

Fiscal Year	Amount Collected
1941-1942 (11 months only)	$ 3,016.40
1942-1943	2,310.69
1943-1944	5,017.99
1944-1945	5,398.76
1945-1946	9,468.23
1946-1947	22,229.23
1947-1948	21,769.51
Sub-total—7 fiscal years	$69,210.81
1948-1949	20,541.77
Total	$89,752.58

MUNICIPAL RAILWAY OF SAN FRANCISCO
ANNUAL REPORT OF BUREAU OF CLAIMS

Fiscal Year Ended June 30, 1949

Number of Operating Accidents	8,610
Number of Unusual Occurrences	1,071
Number of Broken Windows	403
Number of Employee Accidents (including 1 fatality)	793
Total	10,877
Number of Passenger Accidents (included in above)	2,984
Number of Fatal Operating Accidents (included in above)*	(13)
Number of Passengers Carried	298,475,999
Accidents per 100,000 Passengers	2.885
Passenger Accidents per 100,000 Passengers	1.000
Fatalities per 100,000 Passengers	.004
Car Miles Operated	30,476,886
Passengers Carried per Car Mile Operated	9.79
Accidents per 100,000 Car Miles	28.25
Passenger Accidents per 100,000 Car Miles	9.79
Fatalities per 100,000 Car Miles	.04
Claims Presented	3,878
Claims Adjusted (including suits)	3,156
Suits Filed	337
Suits Disposed of	360
Suits Pending	648
Per Cent Claims Presented to Operating Accidents	45.04
Per Cent Settlements to Accidents	36.65
Per Cent Settlements to Claims Presented	81.38
Total Operating Revenue	$18,592,096.33

	Gross Expenditures	Credits from Excess Liability Carrier	Net Expenditures
Personal Injury Settlements	$1,225,862.72	$144,373.78	$1,081,488.94
Property Damage Settlements	102,476.25	.....	102,476.25
Salaries and Wages†	230,993.22	.....	230,993.22
Miscellaneous and Hospital Expense†	90,292.23	.....	90,292.23
Insurance	61,090.89	.....	61,090.89
Total Expenditures—Claims Dept.	$1,710,715.31	$144,373.78‡	$1,566,341.53

Ratio Expenditures to Operating Revenue	.0842
Personal Injury Cost per 1,000 Passengers	3.62
Personal Injury Cost per 1,000 Car Miles	35.48
Total Expenditures Cost per 1,000 Passengers	5.25
Total Expenditures Cost per 1,000 Car Miles	51.39

*Parenthetical number of deaths noted (13) are reported in some other classification of accidents.
†Salaries and wages account, and miscellaneous and hospital expense account, include expenses of the City Attorney's office amounting to $98,851.00 for the year.
‡Includes $24,350.00 paid direct to claimants by excess insurance carrier.

SUMMARY OF TYPES OF ACCIDENTS

COMPARISON OF ACCIDENTS OCCURRING DURING FISCAL YEAR ENDING JUNE 30, 1949

with

Fiscal Year Ended June 30, 1948

	Electric Car		Trolley Coach		Motor Coach		Cable Car		Total	
	1947-8	1948-9	1947-8	1948-9	1947-8	1948-9	1947-8	1948-9	1947-8	1948-9
TRAFFIC ACCIDENTS										
Collision with Persons	187	101	16	20	64	105	6	12	273	238
*Deaths	(12)	(6)	(0)	(0)	(1)	(5)	(1)	(2)	(14)	(13)
Collision with Own Cars and/or Coaches	117	65	1	10	28	46	5	2	151	123
Collision with Other Motor Vehicles	3,302	1,777	273	528	1,379	2,323	371	270	5,325	4,898
Collision with Fixed Objects	5	3	6	13	32	51	1	1	44	68
Collision with Other Objects	24	17	3	8	26	40	1	3	54	68
Derailments—Switch Occurrences	54	21	...	...	...	...	6	12	60	33
Dewirements	...	2	...	10	...	...	...	...	0	12
Total Traffic Accidents	3,689	1,986	299	589	1,529	2,565	390	300	5,907	5,440
PASSENGER ACCIDENTS										
Boarding Moving Car or Coach	637	328	0	1	3	3	20	16	660	348
Boarding—Caught or Struck by Doors	14	18	5	22	38	92	0	0	57	132
Boarding—Trips, Slips, Stumbles, etc.	164	87	4	17	30	66	6	1	204	171
Alighting Moving Car or Coach	299	112	2	1	6	9	31	34	338	156
Alighting—Caught or Struck by Doors	6	24	14	32	84	156	0	0	104	212
Alighting—Trips, Slips, Stumbles, etc.	174	123	15	34	88	193	11	18	288	368
On Board—Thrown, Fell, Slipped	678	382	43	133	324	729	53	26	1,098	1,270
On Board—Other Injuries	320	183	18	19	57	106	15	19	410	327
Total Passenger Accidents	2,292	1,257	101	259	630	1,354	136	114	3,159	2,984
OTHER ACCIDENTS										
Miscellaneous	556	100	30	16	68	52	30	18	684	186
Broken Windows	486	319	5	13	14	44	9	27	514	403
Unusual Occurrence Reports	177	542	10	63	66	424	21	42	274	1,071
Total—Other Accidents	1,219	961	45	92	148	520	60	87	1,472	1,660
Total—Employee Accidents excluded	7,200	4,204	445	940	2,307	4,439	586	501	10,538	10,084
†Employee Accidents	964	400	...	78	...	244	...	71	964	793
Total Accidents	8,164	4,604	445	1,018	2,307	4,683	586	572	11,502	10,877
WITNESSES—1948-1949										
Witnesses Obtained	...	9,023	...	1,772	...	9,685	...	1,389	....	21,869
Witnesses per Accident Report	...	1.96	...	1.74	...	2.07	...	2.43	....	2.01

*Deaths, (13) noted on page 1 in parentheses are included in accidents reported in other classifications.
†Not segregated by type of equipment in 1947-48.

EXHIBIT "A"
MUNICIPAL RAILWAY OF SAN FRANCISCO
BALANCE SHEET—JUNE 30, 1949

Assets

FIXED CAPITAL:			
Road and Equipment:			
Municipal Railway	$14,961,943.71		
1947 Municipal Railway Bond Fund	8,480,947.43	$23,442,891.14	
Less: Reserve for Depreciation	9,104,506.27	$14,338,384.87	
Market Street Extension	$20,469,052.32		
Less: Reserve for Depreciation	17,973,214.73	2,495,837.59	
New Construction in Progress		1,361.55	$16,835,584.01
CASH:			
On Deposit with Treasurer:			
Operating Fund		$2,723,578.62	
Bond Redemption Fund		2,000.00	
Bond Interest Fund		1,170.00	
Reconstruction and Replacement Fund		351,340.00	
Reserve for Land Purchase		1,000.00	
Market Street Extension		80,173.34	
1947 Municipal Railway Rehabilitation Bond Interest Fund		11,805.00	
1947 Market Street Railway Refinancing Fund		4,537.30	
1947 Market Street Railway Refinancing Bond Interest Fund		437.50	
OTHER CASH:			
Revolving Fund		15,000.00	3,191,041.76
INTERFUND ACCOUNTS RECEIVABLE:			
Taxes Receivable—Current Year		$11,913.94	
Hetch Hetchy Water Supply—Utilities Engineering Bureau		1,382.19	13,296.13
ACCOUNTS RECEIVABLE:			
Miscellaneous			120,860.27
INTRAFUND ACCOUNTS—SCHEDULE ANNEXED:			
Intrafund Accounts		$242,595.50	
1947 Municipal Railway Rehabilitation Bond Fund		5,010.43	247,605.93
DEFERRED CHARGES:			
Material and Supplies—Metal Tokens		$42,535.56	
Materials and Supplies		738,865.81	
Materials and Supplies 1947 Bond Fund		162,129.42	
Replacement Jobs in Progress		25,470.73	
Suspense Debits		487,544.17	
Prepaid Expenses:			
Purchasing Department			
Hetch Hetchy Water Supply	4,930.33		
Public Utilities Commission	3,315.15		
Insurance	17,270.30	25,515.78	
CONTRACTS, PURCHASE ORDERS, SERVICE ORDERS, ORDER FOR WORK, ETC., (CONTRA):			
To Outsiders	$156,468.12		
To Other City Departments	181,550.00	338,018.12	1,820,079.59
			$22,228,467.69

Liabilities

BONDED DEBT:			
Issue of Dec. 1, 1913, due 1949-52 at rate of $100,000 per year		$400,000.00	
1947 Market Street Railway Refinancing		1,850,000.00	
Matured Bonds (1913 Issue)		2,000.00	$2,252,000.00
BOND INTEREST PAYABLE:			
Accrued—Not Due:			
1913 Issue	$1,666.67		
1947 Municipal Railway Rehabilitation	117,284.38		
1947 Market Street Railway Refinancing	3,854.16	$122,805.21	
MATURED COUPONS UNPAID:			
1913 Issue	$1,125.00		
1910 Issue (Geary Street)	22.50		
1910 Issue (Market Street)	22.50		
1947 Municipal Railway Rehabilitation	1,500.00		
1947 Market Street Railway Refinancing	437.50	3,107.50	125,912.71
ACCOUNTS PAYABLE:			
Warrants Outstanding		$901,036.90	
General Creditors		597,878.94	
Payrolls Payable		7,774.29	
Contracts, Purchase Orders, Service Orders, Orders for Work, etc. (Contra)		156,468.12	1,663,158.25
INTERFUND ACCOUNTS:			
Schedule Annexed Including Commitments for Incomplete Work Orders, etc., of $181,550 (See Contra)			906,932.00
INTRAFUND ACCOUNTS (Contra)			242,595.50
DEFERRED CREDITS:			
Accident Reserve		$2,267,892.93	
Reserve for Obsolescence in Inventory		46,307.43	
Suspense Credits		35,026.25	
Reserve for Token Liability		10,000.00	
Miscellaneous Deposits		1,312.91	
Reserve for Employees' Compensation Claims		165,000.00	
Premium on 1947 Market Street Railway Refinancing Bonds		278.53	
Taxes		11,913.94	2,537,731.99
SURPLUS—Schedule Annexed			14,500,137.24
			$22,228,467.69

EXHIBIT "A-1"
MUNICIPAL RAILWAY OF SAN FRANCISCO
SURPLUS ACCOUNT FOR TWELVE MONTHS ENDED JUNE 30, 1949

	1947 Bond Fund	Contributed	Earned	Total
ADDITIONS TO SURPLUS:				
General Taxes	.....	$1,501,745.31	.....	$1,501,745.31
Donated Equipment	.....	96,030.09	.....	96,030.09
Stores	.....	4,878.88	.....	4,878.88
Impounded Fares—Market Street Railway	.....	688,751.58	.....	688,751.58
Equipment from 1947 Municipal Railway Rehabilitation Bond Fund	$1,855,493.95	.....	.....	1,855,493.95
Net Earnings from Railway Operations December 28, 1912, to June 30, 1948	.....	.....	$5,470,880.05	5,470,880.05
TOTAL ADDITIONS	$1,855,493.95	$2,291,405.86	$5,470,880.05	$9,617,779.86
DEDUCTIONS FROM SURPLUS:				
For 1947 Municipal Railway Rehabilitation Bond Interest	$38,271.19	.....	.....	$38,271.19
TOTAL DEDUCTIONS	$38,271.19	.....	.....	$38,271.19
SURPLUS—JUNE 30, 1948	$1,817,222.76	$2,291,405.86	$5,470,880.05	$9,579,508.67
ADDITIONS TO SURPLUS JULY 1, 1948, TO JUNE 30, 1949:				
Taxes Receivable 1948-1949	.....	$1,763,225.55	.....	$1,763,225.55
Road and Equipment from 1947 Municipal Railway Rehabilitation Bond Fund	$6,625,453.48	.....	.....	6,625,453.48
From Capital Improvement Fund for Payment 1947 Municipal Railway Rehabilitation Bond Fund and 1947 Market Street Railway Refinancing Bond Fund Interest and Redemption	.....	686,109.65	.....	686,109.65
Reduce Token Liability	.....	.....	$151,320.08	151,320.08
Donated Equipment	.....	963.94	.....	963.94
Cancelled Payroll and Supply Warrants Issued Prior to July 1, 1947, and Outstanding June 30, 1949	.....	.....	312.03	312.03
TOTAL ADDITIONS	$6,625,453.48	$2,450,299.14	$151,632.11	$9,227,384.73
DEDUCTIONS FROM SURPLUS JULY 1, 1948, TO JUNE 30, 1949:				
Adjustments of 1947 Municipal Railway Rehabilitation Bond Interest—Prior Year	.....	.....	$578.44	$578.44
For 1947 Municipal Railway Rehabilitation Bond Interest	$153,486.97	.....	.....	153,486.97
For 1947 Municipal Railway Rehabilitation Bond Redemption	434,000.00	.....	.....	434,000.00
Audit Adjustment for Fiscal Year 1947-1948	.....	.....	83,681.59	83,681.59
Back Pay Awarded to Former Market Street Railway Employees	.....	.....	37,857.76	37,857.76
Net Loss from Railway Operations	.....	.....	2,307,832.98	2,307,832.98
Adjustment of Pay Due Auto Mechanics and Machinists, Body Fender Workers, and Related Foremen and Sub-foremen 1946-47—1947-48	.....	.....	83,616.71	83,616.71
Controller's Office Employees Compiling Payroll Adjustment for Auto Mechanics, Machinists and Related Workers 1946-47—1947-48	.....	.....	4,112.57	4,112.57
Controller's Appraisal of Road and Equipment as of June 30, 1948—Adjustments	.....	.....	1,201,589.14	1,201,589.14
TOTAL DEDUCTIONS	$587,486.97	.....	$3,719,269.19	$4,306,756.16
SURPLUS—JUNE 30, 1949	$7,855,189.27	$4,741,705.00	$1,903,242.97	$14,500,137.24

EXHIBIT "A-II"
MUNICIPAL RAILWAY OF SAN FRANCISCO
1947 MUNICIPAL RAILWAY REHABILITATION BOND FUND
PROPRIETARY BALANCE SHEET—JUNE 30, 1949

Assets

FIXED CAPITAL IN SERVICE:		
Transferred to Municipal Railway Operating Fund		$8,480,947.43
FIXED CAPITAL UNDER CONSTRUCTION:		
Equipment	$5,254.41	
Buildings and Yards	1,432,986.89	
Power Distribution Systems	898,568.09	
Improvements—Surface and Underground	27,144.84	
Undistributed Construction Costs:		
Interest During Construction	96,670.05	
Preliminary Expenses	2,068.31	
Legal Fees and Expenses	1,727.94	
Engineering	19,545.76	
Furniture and Equipment	4,394.13	2,488,360.42
CASH ON DEPOSIT WITH TREASURER:		
1947 Municipal Railway Rehabilitation Bond Fund		4,241,570.41
CONTRACTS, PURCHASE ORDERS, SERVICE ORDERS, ORDERS FOR WORK, ETC., (CONTRA):		
To Outsiders	$506,948.42	
To Other City Departments	150,370.50	657,318.92
		$15,868,197.18

Liabilities

BONDED DEBT:		
Bonds Outstanding—Unmatured		$14,466,000.00
ACCOUNTS PAYABLE:		
Warrants Outstanding	$23,024.19	
General Creditors	63,504.63	
Contracts, Purchase Orders, Service Orders, Orders for Work, Etc. (Contra)	506,948.42	593,477.24
INTRAFUND ACCOUNTS PAYABLE:		
Municipal Railway Operating Fund		5,010.43
INTERFUND ACCOUNTS PAYABLE—P.S.E.:		
Bureau of Light, Heat and Power	$1,453.82	
Hetch Hetchy Water Supply, Power and Utilities Engineering Bureau	21,889.50	
Commitments—Incompleted Work Orders (Contra)	145,600.00	168,943.32
INTERFUND ACCOUNTS PAYABLE—GENERAL CITY AND COUNTY:		
Department of Public Works	$306.62	
Commitments—Incompleted Work Orders (Contra)	4,770.50	5,077.12
DEFERRED CHARGES:		
Bond Premium Unamortized		3,930.91

Surplus

CONTRIBUTED FROM THE MUNICIPAL RAILWAY OPERATING FUND:		
Bond Redemption	$434,000.00	
Interest During Construction	191,758.16	625,758.16
		$15,868,197.18

EXHIBIT "B"
MUNICIPAL RAILWAY OF SAN FRANCISCO
COMPARATIVE INCOME STATEMENT FOR TWELVE MONTHS OF FISCAL YEAR 1948-1949

	Twelve Months to June 30				Cumulative from December 28, 1912, to June 30, 1949	
	1949	%	1948	%		%
REVENUE:						
Passenger Revenue	$18,456,459.46	100.00	$18,171,522.23	100.00	$187,602,831.61	100.00
Advertising Revenue	119,129.23	....	125,415.34	....	1,103,397.07	....
Miscellaneous	16,507.64	...	24,644.34	....	269,420.26	....
Total Revenue	$18,592,096.33	....	$18,321,581.91	....	$188,975,648.94	....
OPERATING EXPENSES:						
I Way and Structures	$778,449.93	4.22	$932,024.02	5.13	$7,912,735.59	4.22
II Equipment	2,098,591.54	11.37	1,894,274.59	10.42	14,550,870.29	7.76
III Power	2,134,226.82	11.56	1,859,977.71	10.24	21,874,762.60	11.66
IV Conducting Transportation	10,466,672.43	56.71	10,182,450.40	56.03	96,264,454.28	51.31
VI General and Miscellaneous	2,334,266.78	12.65	2,207,744.47	12.15	14,855,369.48	7.92
Total Operating Expenses	$17,812,207.50	96.51	$17,076,471.19	93.97	$155,458,192.24	82.87
PROFIT FROM OPERATIONS	$779,888.83	....	$1,245,110.72	....	$33,517,456.70	....
DEDUCT PROVISION FOR:						
Accidents	1,384,234.46	7.50	1,361,856.30	7.49	11,068,051.51	5.90
Depreciation	1,450,311.34	7.86	1,087,841.45	5.99	15,925,475.39	8.49
Total Deductions	$2,834,545.80	15.36	$2,449,697.75	13.48	$26,993,526.90	14.39
INCOME FROM OPERATIONS	*2,054,656.97*	....	*1,204,587.03*	....	6,523,929.80	....

NON-OPERATING INCOME:						
Income from Securities Owned	.....	....	.....	....	597,037.91	....
Interest on Bank Balance	12,752.54	....	6,537.42	....	121,634.79	....
Subsidy from Harbor Commission	.....	....	.....	....	70,229.71	....
Other Income (P & L)	64,338.15	....	43,311.53	....	425,581.09	....
Total Non-Operating Income	$77,090.69	....	$49,848.95	....	$1,214,483.50	....
GROSS INCOME	*$1,977,566.28*	....	*$1,154,738.08*	....	$7,738,413.30	....
DEDUCTIONS FROM GROSS INCOME:						
Interest on Funded Debt	107,194.79	.58	30,727.50	.17	4,762,934.97	2.54
Interest During Acquisition	.....	....	64,725.99	.36	397,159.20	.21
Taxes	21,017.67	.11	17,552.68	.09	75,465.06	.04
Miscellaneous Debits (P & L)	.....	....	.....	....	153,669.20	.08
Total Deductions from Gross Income	$128,212.46	.69	$113,006.17	.62	$5,389,228.43	2.87
Net Income Before Retirement Charges	*$2,105,778.74*	*11.41*	*$1,267,744.25*	*6.98*	$2,349,184.87	1.25
Retirement Charges	202,054.24	1.09	240,092.91	1.32	445,941.90	.24
NET INCOME	*$2,307,832.98*	*12.50*	*$1,507,837.16*	*8.30*	$1,903,242.97	1.01

Italic figures denote loss and deficiency.

SCHEDULE I
MUNICIPAL RAILWAY OF SAN FRANCISCO
SCHEDULE OF ROAD AND EQUIPMENT AS OF JUNE 30, 1949
ADDITIONS FISCAL YEAR 1948-1949

Acct. No.		Balance June 30, 1948	Controller's Appraisal Adjustments	Controller's Appraisal June 30, 1948	Contributions from 1947 Rehabilitation Bond Fund	Reconstruction and Replacement Fund	Municipal Railway Operating Fund	Total	Retirements During Fiscal Year 1948-49	Net Additions Fiscal Year 1948-49	June 30, 1949 Balance
	I—WAY AND STRUCTURES										
502	Right of Way	$353,342.33	.....	$353,342.33	.....	.....	.....	.....	.....	.....	$353,342.33
503	Other Land Used in Operations, Cars	1,024,034.72	.....	1,024,034.72	.....	.....	*$317,477.72**	*$317,477.72*	$981.40	*$318,459.12*	705,575.60
B503	Other Land Used in Operations, M.C.	240.123.37	.....	240,123.37	.....	.....	127,200.00*	127,200.00	.....	127,200.00	367,323.37
C503	Other Land Used in Operations, C.C.	34,200.00	.....	34,200.00	.....	.....	.....	.....	.....	.....	34,200.00
T503	Other Land Used in Operations, T.C.	.....	.....	.....	$98,532.05	.....	190,277.72*	288,809.77	.....	288,809.77	288,809.77
504	Grading, Cars	2,785,953.45	.....	2,785,953.45	44,537.30	.....	.....	44,537.30	416,521.65	*371,984.35*	2,413,969.10
C504	Grading, C.C.	814.30	.....	814.30	.....	.....	.....	.....	42.04	*42.04*	772.26
505	Ballast, Cars	1,451,550.64	*$15.90*	1,451,534.74	16,241.39	.....	142.52	16,383.91	226,486.02	*210,102.11*	1,241,432.63
C505	Ballast, C.C.	362.00	15.90	377.90	.....	.....	.....	.....	52.14	*52.14*	325.76
506	Ties, Cars	847,307.13	*9.90*	847,297.23	266.71	$17,934.76	223.06	18,424.53	132,117.88	*113,693.35*	733,603.88
C506	Ties, C.C.	390.00	.....	390.00	.....	.....	.....	.....	61.62	*61.62*	328.38
507	Rails, Rail Fastenings and Joints, Cars	3,440,472.21	*99.64*	3,440,372.57	3,057.05	47,871.72	7,400.38	58,329.15	582,136.46	*523,807.31*	2,916,565.26
C507	Rails, Rail Fastenings and Joints, C.C.	55,541.68	.20	55,541.88	.....	.....	301.21	301.21	18,070.05	*17,768.84*	37,773.04
508	Special Work, Cars	1,559,953.63	*36.45*	1,559,917.18	689.50	1,014.32	3,663.09	5,366.91	377,491.09	*372,124.18*	1,187,793.00
C508	Special Work, C.C.	71,881.81	.....	71,881.81	.....	.....	.....	.....	10,874.44	*10,874.44*	61,007.37
509	Underground Construction, Cars	131,099.36	.....	131,099.36	.....	.....	.....	.....	111,165.68	*111,165.68*	19,933.68
C509	Underground Construction, C.C.	626,784.50	.....	626,784.50	.....	.....	.....	.....	196,890.69	*196,890.69*	429,893.81
510	Track and Roadway Labor, Cars	3,037,981.31	*854.40*	3,037,126.91	106,669.75	.....	35,688.48	142,358.23	466,848.50	*324,490.27*	2,712,636.64
C510	Track and Roadway Labor, C.C.	115,386.70	200.95	115,587.65	.....	.....	2,539.08	2,539.08	34,026.10	*31,487.02*	84,100.63
511	Paving, Cars	4,775,665.17	*283.98*	4,775,381.19	88,908.96	.....	7,023.02	95,931.98	844,611.26	*748,679.28*	4,026,701.91
C511	Paving, Cable Cars	126,675.14	71.90	126,747.04	.....	.....	165.10	165.10	40,132.91	*39,967.81*	86,779.23
512	Roadway Machinery and Tools, Cars	81,025.87	657.00	81,682.87	.....	.....	.....	.....	457.49	*457.49*	81,225.38
B512	Roadway Machinery and Tools, M.C.	581.00	.....	581.00	.....	.....	.....	.....	.....	.....	581.00
C512	Roadway Machinery and Tools, C.C.	465.00	.....	465.00	.....	.....	.....	.....	.....	.....	465.00
513	Tunnels	14,987.49	.....	14,987.49	.....	.....	.....	.....	.....	.....	14,987.49
515	Bridges, Trestles and Culverts	101,375.85	.....	101,375.85	.....	.....	.....	.....	.....	.....	101,375.85
516	Crossings, Fences and Signs	76,754.81	.....	76,754.81	.....	.....	.....	.....	.....	.....	76,754.81
517	Signal and Interlocking Apparatus, Cars	21,808.53	.....	21,808.53	.....	.....	439.45	439.45	.....	439.45	22,247.98
C517	Signal and Interlocking Apparatus, C.C.	1,741.00	.....	1,741.00	.....	.....	.....	.....	.....	.....	1,741.00
518	Telephone and Telegraph Lines	50,688.34	.....	50,688.34	.....	.....	21.50	21.50	.....	21.50	50,709.84
519	Poles and Fixtures, Cars	1,218,688.12	149.00	1,218,837.12	.....	161.56	*118,200.28**	*118,038.72*	61,160.72	*179,199.44*	1,039,637.68
B519	Poles and Fixtures, M.C.	691.77	.....	691.77	.....	.....	661.12	661.12	.....	661.12	1,352.89
C519	Poles and Fixtures, C.C.	3,613.00	.....	3,613.00	.....	.....	.....	.....	.....	.....	3,613.00
T519	Poles and Fixtures, T.C.	90,702.79	*149.00*	90,553.79	.....	.....	125,416.42*	125,416.42	448.16	124,968.26	215,522.05
520	Underground Conduits, Cars	364,948.91	.....	364,948.91	.....	.....	.....	.....	.....	.....	364,948.91
T520	Underground Conduits, T.C.	3,475.00	.....	3,475.00	.....	.....	.....	.....	.....	.....	3,475.00
521	Distribution System, Cars	2,108,787.09	.....	2,108,787.09	1,192.32	954.04	*144,455.52**	*142,309.16*	186,019.16	*328,328.32*	1,780,458.77
C521	Distribution System, C.C.	605.00	.....	605.00	.....	.....	.....	.....	.....	.....	605.00
T521	Distribution System, T.C.	299,198.52	.....	299,198.52	.....	.....	151,228.07*	151,228.07	17,489.35	133,738.72	432,937.24
523	Shops and Car Houses, Cars	1,896,568.21	*202.68*	1,896,365.53	.....	.....	*365,386.20**	*365,386.20*	218,262.43	*583,648.63*	1,312,716.90
B523	Shops and Car Houses, M.C.	323,068.68	.....	323,068.68	10,938.36	.....	20,391.00*	31,329.36	.....	31,329.36	354,398.04
C523	Shops and Car Houses, C.C.	337,845.00	.....	337,845.00	.....	.....	.....	.....	.....	.....	337,845.00

T523	Shops and Car Houses, T.C.	47,028.38	.....	47,028.38	.....	.....	353,325.60*	353,325.60	44,676.96	308,648.64	355,677.02
524	Stations, Misc. Bldgs. & Structures, Cars.	166,940.48	*399.02*	166,541.46	.....	.....	901.15	901.15	44,956.22	*44,055.07*	122,486.39
B524	Stations, Misc. Bldgs. & Structures, M.C.	2,913.57	.....	2,913.57	.....	.....	*297.90**	*297.90*	297.91	*595.81*	2,317.76
C524	Stations, Misc. Bldgs. & Structures, C.C..	123.00	.....	123.00	.....	.....	.....	.....	.....	.....	123.00
T524	Stations, Misc. Bldgs. & Structures, T.C..	10,041.45	.....	10,041.45	.....	.....	*7,203.76**	*7,203.76*	416.09	*7,619.85*	2,421.60
	Total—Way and Structures.....	$27,904,186.31	*$956.02*	$27,903,230.29	$371,033.39	$67,936.40	$73,986.59	$512,956.38	$4,032,694.42	*$3,519,738.04*	$24,383,492.25
	II—EQUIPMENT										
530	Passenger and Combination Cars, Cars..	$6,112,515.64	.....	$6,112,515.64	.....	$208,986.31	$9,669.13	$218,655.44	$2,987,638.92	*$2,768,983.48*	$3,343,532.16
B530	Passenger and Combination Cars, M.C...	4,931,846.82	.....	4,931,846.82	$2,359,115.48	.....	.....	2,359,115.48	115,988.88	2,243,126.60	7,174,973.42
C530	Passenger and Combination Cars, C.C....	154,978.00	.....	154,978.00	.....	.....	.....	.....	.....	.....	154,978.00
T530	Passenger and Combination Cars, T.C...	921,815.48	$4,979.25	926,794.73	3,739,902.22	.....	8,538.42	3,748,440.64	.....	3,748,440.64	4,675,235.37
530-A	Fare Boxes, Cars.....	46,857.25	*4,891.76*	41,965.49	.....	.....	*24,097.77**	*24,097.77*	.....	*24,097.77*	**17,867.72**
B530-A	Fare Boxes, M.C.....	48,567.64	*3,687.49*	44,880.15	12,764.24	.....	12,460.55*	25,224.79	.....	25,224.79	70,104.94
T530-A	Fare Boxes, T.C.....	6,156.96	*655.22*	5,501.74	27,882.89	.....	11,637.22*	39,520.11	.....	39,520.11	45,021.85
532-A	Service Equipment, Electric.....	180,798.51	2.00	180,800.51	.....	.....	.....	.....	13,333.00	*13,333.00*	167,467.51
532-B	Service Equipment, Automotive.....	84,487.62	*84,487.62*	.....	.....	.....	.....	.....	.....	.....	.....
533	Electric Equipment of Cars.....	2,815,583.08	.....	2,815,583.08	.....	68,777.50	.....	68,777.50	1,210,884.60	*1,142,107.10*	1,673,475.98
T533	Electric Equipment of Cars, T.C.....	42,707.53	.....	42,707.53	.....	.....	.....	.....	.....	.....	42,707.53
536	Shop Equipment, Cars.....	557,821.53	.....	557,821.53	773.86	.....	75.85	849.71	1,021.65	*171.94*	557,649.59
B536	Shop Equipment, M.C.....	88,841.20	*357.52*	88,483.68	73,276.65	.....	105.57	73,382.22	961.86	72,420.36	160,904.04
C536	Shop Equipment, C.C.....	15,733.52	.....	15,733.52	.....	.....	.....	.....	.....	.....	15,733.52
T536	Shop Equipment, T.C.....	2,167.73	266.50	2,434.23	40,704.75	.....	.....	40,704.75	.....	40,704.75	43,138.98
537	Furniture and Office Equipment, Cars...	178,724.25	3,638.47	182,362.72	.....	2,950.46	246.95	3,197.41	2,036.95	1,160.46	183,523.18
B537	Furniture and Office Equipment, M.C...	13,416.94	.....	13,416.94	.....	2,866.00	45.00	2,911.00	3,555.00	*644.00*	12,772.94
C537	Furniture and Office Equipment, C.C....	3,013.18	.....	3,013.18	.....	.....	.....	.....	.....	.....	3,013.18
538	Misc. Equipment, Cars.....	76,745.35	59,799.53	136,544.88	.....	588.64	.....	588.64	4,767.45	*4,178.81*	132,366.07
	Total—Equipment	$16,282,778.23	*$25,393.86*	$16,257,384.37	$6,254,420.09	$284,168.91	$18,680.92	$6,557,269.92	$4,340,188.31	$2,217,081.61	$18,474,465.98
	III—POWER										
540	Sub-Station Buildings, Cars.....	$357,240.47	.....	$357,240.47	.....	.....	.....	.....	.....	.....	$357,240.47
C542	Power Plant Equipment, C.C.....	150,706.00	.....	150,706.00	.....	.....	.....	.....	.....	.....	150,706.00
543	Sub-Station Equipment, Cars.....	519,507.00	.....	519,507.00	.....	.....	.....	.....	$12,263.00	*$12,263.00*	507,244.00
544	Transmission System, Cars.....	38,194.76	.....	38,194.76	.....	.....	.....	.....	.....	.....	38,194.76
	Total—Power	$1,065,648.23	.....	$1,065,648.23	.....	.....	.....	.....	$12,263.00	*$12,263.00*	$1,053,385.23
	IV—GENERAL AND MISCELLANEOUS										
545	Franchises	$600.00	.....	$600.00	.....	.....	.....	.....	.....	.....	$600.00
	Total—General and Misc.....	$600.00	.....	$600.00	.....	.....	.....	.....	.....	.....	$600.00
	SHOP TOOLS AND SUPPLIES										
	Shop Tools and Supplies.....	$24,854.71	*$24,854.71*	.....	.....	.....	.....	.....	.....	.....	.....
	Total—Shop Tools and Supplies...	$24,854.71	*$24,854.71*	.....	.....	.....	.....	.....	.....	.....	.....
	Total—Road and Equipment.....	$45,278,067.48	*$51,204.59*	$45,226,862.89	$6,625,453.48	$352,105.31	$92,667.51	$7,070,226.30	$8,385,145.73	*$1,314,919.43*	$43,911,943.46

Italic figures denote loss and deficiency. *Includes Transfers.

SCHEDULE II
MUNICIPAL RAILWAY OF SAN FRANCISCO
BONDED DEBT
June 30, 1949

	Authorized	Unissued	Retired	Outstanding	Dated	Maturity	Interest Paid	Denomination	Interest	Rate
Municipal Railway (1910)....	$1,981,000	.....	$1,981,000	.....						4½%
Municipal Railway (1913)....	3,500,000	.....	3,100,000	$400,000	12/1/13	$100,000 Dec. 1 (1949-1952)	J & D 1	$100 500 1,000		5%
1947 Municipal Railway Rehabilitation Bonds ($20,000,000)										
(Series "A")	6,500,000	.....	434,000	6,066,000	2/1/48	434,000 Feb. 1 (1950-1953)	A & F 1	1,000	$434,000	1¼%
									1,302,000	1¾%
						433,000 Feb. 1 (1954-1963)			433,000	1¾%
									1,732,000	2%
									2,165,000	2½%
(Series "B")	4,900,000	.....	.....	4,900,000	8/1/48	123,000 Aug. 1 (1949-1956)	F & A 1	1,000	369,000	1¼%
									123,000	1¾%
									492,000	4%
						559,000 Aug. 1 (1957-1960)			1,118,000	1¾%
									1,118,000	2%
						560,000 Aug. 1 (1961-1963)			1,680,000	2%
(Series "C")	3,500,000	.....	.....	3,500,000	3/1/49	90,000 Mar. 1 (1950-1957)	S & M 1	1,000	360,000	1½%
									360,000	6%
						380,000 Mar. 1 (1958)			380,000	1½%
						400,000 Mar. 1 (1959-1964)			2,400,000	1½%
Unsold	5,100,000	5,100,000	.....	.....						
1947 Market Street Railway Refinancing Bonds	2,200,000	250,000	100,000	1,850,000	5/1/48	100,000 May 1 (1950-1951)	N & M 1	1,000		1¼%
						500,000 May 1 (1952-1953)				
						650,000 May 1 (1954)				
	$27,681,000	$5,350,000	$5,615,000	$16,716,000						

MUNICIPAL RAILWAY OF SAN FRANCISCO
STATEMENT OF OPERATIONS BY TYPES OF SERVICE
Fiscal Year Ended June 30, 1949

	Electric Street Car	Motor Coach	Trolley Coach	Cable Cars	System Total
Total Revenue	$8,908,196.37	$7,910,120.31	$1,174,853.14	$598,926.51	$18,592,096.33
Operating Expenses	$8,358,574.39	$7,809,084.90	$941,212.00	$703,336.21	$17,812,207.50
Depreciation	403,948.98	912,230.94	110,015.27	24,116.15	1,450,311.34
Accident Reserve	662,653.62	589,236.73	87,621.19	44,722.92	1,384,234.46
Interest	78,512.89	19,051.45	5,838.17	3,792.28	107,194.79
Non-Operating Expense	96,778.55	*5,264.85*	33,860.61	*410.76*	124,963.55
Taxes	21,017.67	.....	.....	.....	21,017.67
Total Net Deductions	$9,621,486.10	$9,324,339.17	$1,178,547.24	$775,556.80	$20,899,929.31
Net Income	*$713,289.73*	*$1,414,218.86*	*$3,694.10*	*$176,630.29*	*$2,307,832.98*

Note: Above figures do not include bond redemption during the fiscal year as follows:

1913 Bond Issue	$100,000.00
1947 Rehabilitation Bond Issue	434,000.00
1947 Market Street Railway Refinancing Bond Issue	100,000.00
Total	$634,000.00

MUNICIPAL RAILWAY OF SAN FRANCISCO
PLANT INVESTMENT BY TYPES OF SERVICE
As of June 30, 1949

	Total Cost	Accrued Depreciation	Present Value
Electric Street Cars—Municipal Railway	$10,979,326.94	$7,190,936.06	$3,788,390.88
Electric Street Cars—Market Street Extension	17,278,938.53	15,507,192.00	1,771,746.53
Electric Street Cars—Total	$28,258,265.47	$22,698,128.06	$5,560,137.41
Cable Cars—Municipal Railway	$9,017.48	$1,262.41	$7,755.07
Cable Cars—Market Street Extension	1,394,985.70	1,171,377.57	223,608.13
Cable Cars—Total	$1,404,003.18	$1,172,639.98	$231,363.20
Motor Coaches—Municipal Railway	$6,854,299.05	$1,509,403.11	$5,344,895.94
Motor Coaches—Market Street Extension	1,290,429.35	943,554.20	346,875.15
Motor Coaches—Total	$8,144,728.40	$2,452,957.31	$5,691,771.09
Trolley Coaches—Municipal Railway	$5,600,247.67	$402,904.69	$5,197,342.98
Trolley Coaches—Market Street Extension	504,698.74	351,090.96	153,607.78
Trolley Coaches—Total	$6,104,946.41	$753,995.65	$5,350,950.76
Total Plant Investment—Municipal Railway	$23,442,891.14	$9,104,506.27	$14,338,384.87
Total Plant Investment—Market Street Extension	20,469,052.32	17,973,214.73	2,495,837.59
Total Plant Investment—Consolidated System	$43,911,943.46	$27,077,721.00	$16,834,222.46

Italic figures denote loss and deficiency.

MUNICIPAL RAILWAY OF SAN FRANCISCO
SUMMARY OF INCOME AND OUTLAY
December 28, 1912, to June 30, 1949

INCOME

Passenger and Other Revenue	$188,975,648.94		
Subsidy from Harbor Commission	70,229.71		
Contributed	4,741,705.00		
Interest on Bonds and Daily Balances	718,672.70		
Miscellaneous Credits—Profit and Loss	425,581.09		
Cash Received from Sale of 1910-1913 Bond Issue	5,481,000.00		
Road and Equipment—From 1947 Bond Fund	8,480,947.43		
Refinancing Bonds—1947—Principal	1,950,000.00		
Refinancing Bonds—1947—Premium	370.50		
Refinancing Bonds—1947—Accrued Interest	406.25		
Rehabilitation Bonds—1947—Accrued Interest	44,885.60		
Market Street Railway (Historical Value over Purchase Cost)	25,400,019.03		
Total Income and Credits		$236,289,466.25	

OUTLAY

Operating Expenses	$155,458,192.24		
Bond Interest Charges	4,762,934.97		
Injuries and Damages	8,800,158.58		
Miscellaneous Debits—Profit and Loss	153,669.20		
Interest During Acquisition	397,159.20		
Taxes	75,465.06		
Retirement Charges	445,941.90		
Total Expenses		$170,093,521.15	
Excess of Income Over Expenses		$66,195,945.10	
Bonds Redeemed—1913 Issue	$5,081,000.00		
1947 Market Street Railway Refinancing	100,000.00		
1947 Municipal Railway Rehabilitation	434,000.00	5,615,000.00	
Balance after Expenses and Bond Redemption		$60,580,945.10	
Expended for Construction Extensions, Betterments, Replacements and Renewals and Road and Equipment Retired. Includes $25,400,019.03 excess of historical value over purchase cost of Market Street Railway Co. Plant and Equipment. *See detail below		58,329,217.35	
		$2,251,727.75	
Less: Adjustment Account of 1947 Bond Premium and Bond Interest Accrued at Time of Sale—$370.50—$406.25—$44,885.60 equals		45,662.35	
Balance, Net Cash, Receivables, Stores, etc., on Hand			$2,206,065.40
*Total Road and Equipment—Historical Cost	$59,423,751.22		
Deduct: Retirements	15,342,307.29		
Total Road and Equipment on Hand and in use (Historical Cost)	$44,081,443.93		
Add: Portion of Retirements Charged to Reserve	14,247,773.42		
	$58,329,217.35		

CASH

Cash, Revolving Fund, Net	$15,000.00	
*Cash, Operating Fund, Net	1,822,541.72	
†Cash, Reconstruction and Replacement Fund, Net	351,340.00	
Cash, Bond Redemption Fund (1913) Net	.....	
Cash, Bond Interest Fund (1910-1913) Net	.....	
Cash, Reserve for Land Purchase	1,000.00	
Cash, Market Street Extension Fund	80,173.34	
Cash, Rehabilitation Bond Interest Fund	10,305.00	
Cash, Market Street Railway Refinancing Fund (1947)	4,537.30	
Cash, Market Street Railway Refinancing Bond Interest Fund	.....	
Total Net Cash		$2,284,897.36

ACCOUNTS RECEIVABLE

Due from City and County of San Francisco	$13,296.13	
Miscellaneous Accounts Receivable	120,860.27	
Accounts Receivable—1947 Rehabilitation Bond Fund	5,010.43	
Accounts Receivable—Bond Interest—1947 Rehabilitation Fund	191,758.16	
Total Accounts Receivable		330,924.99

STORES

Total Stores	$943,530.79	
Less: Reserve for Obsolescence in Inventory	46,307.43	
Total Net Stores		897,223.36

DEFERRED CHARGES

Prepaid Expenses and Unadjusted Debits		370,391.76
Total Cash, Receivables, Stores, Etc.		$3,883,437.47

LIABILITIES

1947 Rehabilitation Bond Interest Not Due	$117,284.38	
1947 Market Street Railway Refinancing Bond Premium	278.53	
1913 Bond Interest—Accrued—Not Due	1,666.67	
1947 Bond Interest—Market Street Railway Refinancing—Not Due	3,854.16	
Accounts Payable, Payrolls Payable, Interfund Accounts Payable	1,331,035.23	
Reserve for Token Liability	10,000.00	
Suspense Credits	35,026.25	
Miscellaneous Deposits	1,312.91	
Reserve for Employees' Compensation Claims	165.000.00	
Taxes	11,913.94	
		1,677,372.07
Net Free Assets, Exclusive of Outstanding Bonds for Plant in Service totaling $10.631,519.32		$2,206,065.40

*Due to Reconstruction and Replacement Fund from Operating Fund for Cash Transferred for Purchase of Stores $65,031.34

†Due to Operating Fund from Reconstruction and Replacement Fund for Labor and Material on Reconstruction and Replacement Fund Replacement Jobs 177,564.16

MUNICIPAL RAILWAY OF SAN FRANCISCO
STATEMENT OF ELECTRIC STREET CAR OPERATIONS
Fiscal Year July 1, 1948 to June 30, 1949

RECEIPTS			
Fares	$8,636,575.31		
Fares United States Postal Employees	38,200.35		
REVENUE CREDITS			
School Tickets	156,830.15		
Special Tickets	3,775.60		
Total Passenger Revenue		$8,835,381.41	
MISCELLANEOUS REVENUE			
Advertising		59,154.48	
Miscellaneous Revenue		13,660.48	
Total Revenue			$8,908,196.37
OPERATING EXPENSES			
Group I—Way and Structures		$556,945.85	
Group II—Equipment		714,770.56	
Group III—Power		791,239.17	
Group IV—Conducting Transportation		5,149,478.61	
Group VI—General and Miscellaneous		1,146,140.20	
Total Operating Expenses			8,358,574.39
Note: For detail of operating expenses by account numbers see statement in this report entitled "Cost Statement—Itemized Accounts".			
Operating Profit			$549,621.98
NON-OPERATING INCOME			
Bank Interest Received			6,110.25
Total			$555,732.23
Provision for Accidents		$662,653.62	
Provision for Depreciation		403,948.98	
Interest Charges		78,512.89	
Taxes		21,017.67	
Total Reserves and Fixed Charges			1,166,133.16
Net *Loss* Before Retirement Charges			*$610,400.93*
Loss on Equipment Retired			102,888.80
Net *Loss*			*$713,289.73*
Average Net Loss Per Day			*$1,954.22*

Italic figures denote loss and deficiency.

Group		Electric Car Miles 10,821,122 Itemized Cost per Mile	Electric Car Hours 1,230,066 Itemized Cost per Hour
I	Way and Structures	.05147	.45278
II	Equipment	.06605	.58108
III	Power	.07312	.64325
IV	Conducting Transportation	.47587	4.18634
VI	General and Miscellaneous	.10592	.93177
	Total Operating Expense	.77243	6.79522
Provision for Accidents		.06124	.53871
Provision for Depreciation		.03733	.32840
Interest Charges		.00726	.06383
Taxes		.00194	.01709
	Total Reserves and Fixed Charges	.10777	.94803
Loss on Retirements		.00951	.08365
	Total Expense	.88971	7.82690
Passenger Revenue		.81650	7.18285
Advertising and Miscellaneous Revenue		.00673	.05920
Non-Operating Revenue		.00056	.00497
	Total Revenue	.82379	7.24702
	Net *Loss*	*.06592*	*.57988*

Charges to Accident Reserve July 1, 1948 to June 30, 1949:

Proportion Salary Expense—Claims Department	$35,894.96
Accident Claims Paid	759,143.12
Excess Liability Accident Insurance	21,579.90
Total	$816,617.98

PASSENGERS CARRIED

Cash Fares (Fares and Tokens 10c-8⅓c)	$95,393,749
School Tickets	4,111,360
Special Tickets	37,756
Charter	80
Local Transfers	35,574,369
Foreign Transfers	561,376
Total	$135,678,690

Italic figures denote loss and deficiency.

MUNICIPAL RAILWAY OF SAN FRANCISCO
STATEMENT OF CABLE CAR OPERATIONS
Fiscal Year July 1, 1948 to June 30, 1949

RECEIPTS			
Fares	$584,677.24		
Fares United States Postal Employees	948.92		
REVENUE CREDITS			
School Tickets	10,391.45		
Special Tickets	288.15		
Total Passenger Revenue		$596,305.76	
MISCELLANEOUS REVENUE			
Advertising		2,362.06	
Reimbursement for Damaged Cable Cars		258.69	
Total Revenue			$598,926.51
OPERATING EXPENSES			
Group I—Way and Structures		$136,989.81	
Group II—Equipment		56,038.87	
Group III—Power		100,916.34	
Group IV—Conducting Transportation		347,353.21	
Group VI—General and Miscellaneous		62,037.98	
Total Operating Expenses			703,336.21
Note: For detail of operating expenses by account numbers see statement in this report entitled "Cost Statement—Itemized Accounts".			
Operating *Loss*			*$104,409.70*
NON-OPERATING INCOME			
Bank Interest Received			410.76
			$103,998.94
RESERVES AND FIXED CHARGES			
Provision for Accidents	$44,722.92		
Provision for Depreciation	24,116.15		
Interest Charges	3,792.28		
Total Reserves and Fixed Charges			72,631.35
Net *Loss*			*$176,630.29*
Average Net Loss per Day			*$483.92*

Italic figures denote loss and deficiency.

Group		Cable Car Miles 435,824 Itemized Cost per Mile	Cable Car Hours 82,002 Itemized Cost per Hour
I	Way and Structures	.31432	1.67057
II	Equipment	.12858	.68338
III	Power	.23155	1.23066
IV	Conducting Transportation	.79701	4.23591
VI	General and Miscellaneous	.14235	.75654
	Total Operating Expense	1.61381	8.57706
	Provision for Accidents	.10262	.54539
	Provision for Depreciation	.05533	.29409
	Interest Charges	.00870	.04625
	Total Reserves and Fixed Charges	.16665	.88573
	Total Expense	1.78046	9.46279
	Passenger Revenue	1.36823	7.27184
	Advertising and Miscellaneous Revenue	.00601	.03196
	Non-Operating Revenue	.00094	.00501
	Total Revenue	1.37518	7.30881
	Net *Loss*	*.40528*	*2.15398*

Charges to Accident Reserve July 1, 1948 to June 30, 1949:

Proportion Salary Expense—Claims Department	$4,314.73
Accident Claims Paid	139,085.48
Excess Liability Accident Insurance	873.28
Total	$144,273.49

PASSENGERS CARRIED

Cash Fares (Fares and Tokens 10c-8⅓c)	6,342,546
School Tickets	266,369
Special Tickets	2,662
Local Transfers	3,289,293
Foreign Transfers	280,084
Total	10,180,954

Italic figures denote loss and deficiency.

MUNICIPAL RAILWAY OF SAN FRANCISCO
STATEMENT OF TROLLEY COACH OPERATIONS
Fiscal Year July 1, 1948 to June 30, 1949

RECEIPTS			
Fares		$1,141,206.51	
Fares United States Postal Employees		3,481.67	
REVENUE CREDITS			
School Tickets	23,111.93		
Special Tickets	482.50		
Total Passenger Revenue		$1,168,282.61	
MISCELLANEOUS REVENUE			
Advertising		6,373.64	
Reimbursement for Damaged Trolley Coaches		196.89	
Total Revenue			$1,174,853.14
OPERATING EXPENSES			
Group I—Way and Structures		$31,144.26	
Group II—Equipment		107,320.57	
Group III—Power		110,796.87	
Group IV—Conducting Transportation		560,750.95	
Group VI—General and Miscellaneous		131,199.35	
Total Operating Expenses			941,212.00
Note: For detail of operating expenses by account numbers see statement in this report entitled "Cost Statement—Itemized Accounts".			
Operating Profit			$233,641.14
NON-OPERATING INCOME			
Bank Interest Received			805.83
Total			$234,446.97
Provision for Accidents	$87,621.19		
Provision for Depreciation	110,015.27		
Interest Charges	5,838.17		
Total Reserves and Fixed Charges			203,474.63
Net Profit Before Retirement Charges			$30,972.34
Loss on Equipment Retired			$34,666.44
Net *Loss*			*$3,694.10*
Average Net *Loss* Per Day			*$10.12*

Italic figures denote loss and deficiency.

Group		Trolley Coach Miles 1,986,524 Itemized Cost per Mile	Trolley Coach Hours 223,433 Itemized Cost per Hour
I	Way and Structures	.01568	.13939
II	Equipment	.05402	.48033
III	Power	.05577	.49588
IV	Conducting Transportation	.28228	2.50970
VI	General and Miscellaneous	.06605	.58720
	Total Operating Expense	.47380	4.21250
Provision for Accidents		.04411	.39216
Provision for Depreciation		.05538	.49239
Interest Charges		.00294	.02613
	Total Reserves and Fixed Charges	.10243	.91068
	Loss on Retirements	.01745	.15515
	Total Expense	.59368	5.27833
Passenger Revenue		.58810	5.22878
Advertising and Miscellaneous Revenue		.00331	.02941
Non-Operating Revenue		.00041	.00361
	Total Revenue	.59182	5.26180
	Net *Loss*	*.00186*	*.01653*

Charges to Accident Reserve July 1, 1948 to June 30, 1949:

Proportion Salary Expense—Claims Department	$19,788.47
Accident Claims Paid	49,996.54
Excess Liability Accident Insurance	4,022.46
Total	$73,807.47

PASSENGERS CARRIED

Cash Fares (Fares and Tokens 10c-8⅓c)	12,190,830
School Tickets	552,718
Special Tickets	4,825
Local Transfers	6,332,894
Foreign Transfers	135,879
Total	19,217,146

Italic figures denote loss and deficiency.

MUNICIPAL RAILWAY OF SAN FRANCISCO
STATEMENT OF MOTOR COACH OPERATIONS
Fiscal Year July 1, 1948, to June 30, 1949

RECEIPTS			
Fares	$7,625,554.21		
Fares United States Postal Employees	23,021.82		
Chartered Buses	62,708.56		
REVENUE CREDITS			
School Tickets	142,438.49		
Special Tickets @ 10c	2,556.60		
Special Tickets @ 25c	210.00		
Total Passenger Revenue		$7,856,489.68	
MISCELLANEOUS REVENUE			
Advertising		51,239.05	
Reimbursement for Damaged Coaches		2,391.58	
Total Revenue			$7,910,120.31
OPERATING EXPENSES			
Group I—Way and Structures		$53,370.01	
Group II—Equipment		1,220,461.54	
Group III—Power		1,131,274.44	
Group IV—Conducting Transportation		4,409,089.66	
Group VI—General and Miscellaneous		994,889.25	
Total Operating Expenses			7,809,084.90
Note: For detail of operating expenses by account numbers see statement in this report entitled "Cost Statement—Itemized Accounts."			
Operating Profit			$101,035.41
NON-OPERATING INCOME			
Bank Interest Received			5,425.70
Total			$106,461.11
Provision for Accidents	$589,236.73		
Provision for Depreciation	912,230.94		
Interest Charges	19,051.45		
Total Reserves and Fixed Charges			1,520,519.12
Net *Loss* Before Retirement Charges			*$1,414,058.01*
Loss on Equipment Retired			160.85
Net *Loss*			*$1,414,218.86*
Average Net *Loss* Per Day			*$3,874.57*

Italic figures denote loss and deficiency.

Group		Motor Coach Miles 17,233,416 Itemized Cost per Mile	Motor Coach Hours 1,780,877 Itemized Cost per Hour
I	Way and Structures	.00310	.02997
II	Equipment	.07082	.68532
III	Power	.06564	.63523
IV	Conducting Transportation	.25585	2.47580
VI	General and Miscellaneous	.05773	.55865
	Total Operating Expense	.45314	4.38497
	Provision for Accidents	.03419	.33087
	Provision for Depreciation	.05293	.51223
	Interest Charges	.00111	.01070
	Total Reserves and Fixed Charges	.08823	.85380
	Loss on Retirements	.00001	.00009
	Total Expense	.54138	5.23886
	Passenger Revenue	.45589	4.41158
	Advertising and Miscellaneous Revenue	.00311	.03012
	Non-Operating Revenue	.00031	.00305
	Total Revenue	.45931	4.44475
	Net *Loss*	*.08207*	*.79411*

Charges to Accident Reserve July 1, 1948, to June 30, 1949:

Proportion Salary Expense—Claims Department	$170,995.06
Accident Claims Paid	326,032.28
Excess Liability Accident Insurance	34,615.25
Total	$531,642.59

PASSENGERS CARRIED

Cash Fares (Fares and Tokens—10c-8⅓c)	83,022,398
School Tickets	3,580,355
Special Tickets	26,406
Chartered Coaches	492,369
Local Transfers	45,916,795
Foreign Transfers	360,886
Total	133,399,209

Italic figures denote loss and deficiency.

MUNICIPAL RAILWAY OF SAN FRANCISCO
CAR AND COACH HOURS AND MILES OPERATED
CASH AND TOKEN FARES REGISTERED
Fiscal Year 1948-1949

Lines		Car and Coach Hours	Car and Coach Miles	Cash Fares and Tokens Registered	Cash Fares and Tokens Registered Per Car or Coach Hour	Cash Fares and Tokens Registered Per Car or Coach Mile
ELECTRIC CARS						
B	Geary	108,868	1,017,090	$937,815.79	$8.61	$.92
C	California	55,533	477,538	433,693.96	7.81	.91
D	Van Ness	38,605	278,970	271,316.62	7.03	.97
F	Stockton	95,734	701,142	857,744.16	8.96	1.22
H	Potrero	128,744	1,014,244	652,535.32	5.07	.64
J	Church	82,372	656,874	576,821.63	7.00	.88
K	Ingleside	105,204	1,050,540	670,741.32	6.38	.64
L	Taraval	122,412	1,164,705	794,183.34	6.49	.68
M	Ocean View	31,452	317,178	171,367.70	5.45	.54
N	Judah	125,923	1,161,397	865,998.30	6.88	.75
1	Sutter-California	33,824	297,003	280,164.90	8.28	.94
2	Sutter-Clement	37,264	331,244	298,368.29	8.01	.90
3	Sutter-Jackson	30,818	182,048	272,673.12	8.85	1.50
4	Sutter-Sacramento	2,243	17,076	17,336.02	7.73	1.02
6	Haight-Masonic	321	2,608	1,792.86	5.59	.69
7	Haight-Ocean	657	5,712	3,977.28	6.05	.70
8	Castro	17,159	121,447	84,699.22	4.94	.70
9	Mission-Richland	16,631	135,716	116,453.49	7.00	.86
11	Mission-24th St.	20,261	153,284	141,693.89	6.99	.92
12	Mission-Ocean	1,702	16,704	9,364.96	5.50	.56
14	Mission	82,439	767,236	641,166.82	7.78	.84
22	Fillmore	9,185	66,827	56,133.42	6.11	.84
25	San Bruno	2,373	18,493	12,122.55	5.11	.66
27	Bryant	484	3,796	2,582.47	5.34	.68
31	Balboa	58,305	527,973	378,790.08	6.50	.72
40	San Mateo	21,544	334,222	85,416.70	3.96	.26
	Chartered Electric Cars	9	55	.....	...	...
	Total—Electric Cars	1,230,066	10,821,122	$8,634,954.21	$7.02	$.80
MOTOR COACH ROUTES						
1 & 2	Sutter-Clement	50,358	500,623	$277,957.41	$5.52	$.56
3	Jackson	20,882	199,734	53,830.93	2.58	.27
4	Lake	18,303	206,561	57,637.81	3.15	.28
5	McAllister	116,249	1,142,351	657,061.81	5.65	.58
6	Masonic	47,933	407,680	226,458.42	4.72	.56
7	Haight	113,214	1,083,355	576,165.61	5.09	.53
9	Richland	35,015	274,593	237,610.90	6.79	.87
10	Monterey	69,034	734,136	241,765.15	3.50	.33
10	*Lincoln Way Shuttle	50	488	45.57	.91	.09
11	Hoffman	25,110	207,390	125,765.95	5.01	.61
14	Mission	94,787	967,450	482,423.42	5.09	.50
15	Third	187,382	1,808,706	880,073.21	4.69	.49
16	Noriega	64,607	698,046	249,728.96	3.87	.36
17	Park-Merced	4,856	55,447	13,759.73	2.83	.25
18	Sloat	13,480	150,412	25,331.86	1.88	.17
19	Polk	73,316	591,819	333,425.04	4.55	.56
20	Ellis	39,302	346,624	206,470.40	5.25	.60
21	Hayes	83,449	688,269	464,972.53	5.57	.68
22	Fillmore	67,919	536,802	292,771.56	4.31	.55
23	Crescent	11,307	115,252	26,898.95	2.38	.23
24	Divisadero	58,455	462,998	257,871.34	4.41	.56

Lines		Car and Coach Hours	Car and Coach Miles	Cash Fares and Tokens Registered	Cash Fares and Tokens Registered Per Car or Coach Hour	Cash Fares and Tokens Registered Per Car or Coach Mile
25	Bryant	39,904	391,968	147,029.13	3.68	.38
26	Daly City	63,737	779,627	255,079.73	4.00	.33
27	Noe	36,475	388,469	135,876.59	3.73	.35
28	Alemany	63,386	815,029	157,734.78	2.49	.19
29	Visitacion	12,737	127,035	47,953.15	3.76	.38
31	Balboa	21,854	227,174	88,528.10	4.05	.39
32	Embarcadero	26,958	234,729	101,034.09	3.75	.43
34	Marina	8,105	59,722	20,481.70	2.53	.34
35	Eureka	32,023	286,543	140,238.46	4.38	.49
36	Miraloma	19,393	204,074	30,802.66	1.59	.15
36	Folsom	548	5,761	1,085.67	1.98	.19
37	Corbett	5,388	50,114	7,331.82	1.36	.15
38	Portola	9,012	108,797	10,094.57	1.12	.09
39	Coit	8,071	46,301	12,510.74	1.55	.27
42	Evans	55,748	545,573	251,114.68	4.50	.46
43	Roosevelt	16,842	168,371	41,699.10	2.48	.25
44	Sansome	3,563	21,765	10,641.26	2.99	.49
50	Geneva	18,533	208,795	56,937.08	3.07	.27
51	Silver	25,656	290,491	72,083.25	2.81	.25
52	Excelsior	9,243	86,107	31,637.70	3.42	.37
53	So. Heights	13,689	121,415	34,141.33	2.49	.28
54	Army	27,524	271,977	58,845.66	2.14	.22
55	Sacramento	24,498	186,128	107,856.43	4.40	.58
57	Candlestick	7,837	85,123	14,344.42	1.83	.17
75	Legion of Honor Palace	877	6,116	1,498.56	1.71	.25
B	Geary-Shuttle	13	102	30.30	2.33	.30
C	California	9,300	91,691	14,480.43	1.56	.16
D	Van Ness	9,764	99,148	22,488.38	2.30	.23
F	Stockton	7,525	61,328	42,566.24	5.66	.69
F	Stockton-Shuttle	20	175	38.07	1.90	.22
H	Potrero	1,202	21,393	2,401.80	2.00	.11
H	Potrero-Shuttle	8	80	11.52	1.44	.14
J	Church-Shuttle	5	36	.40	.08	.01
K	Ingleside-Shuttle	12	34	34.90	2.91	1.03
L	Taraval Shuttle	16	155	42.42	2.65	.27
M	Ocean View	5,473	56,051	5,950.12	1.09	.11
	Special Tour	68	527	.....	...	...
	Emergency Service	137	1,257	298.48	1.43	.24
	Charter Service	725	5,499	59,403.34	...	...
	Total—Motor Coach Routes	1,780,877	17,233,416	$7,672,353.62	$4.31	$.45
	TROLLEY COACH ROUTES					
22	Fillmore	71,140	547,211	$381,605.62	$5.36	$.70
33	Ashbury	50,957	523,571	203,309.80	3.99	.39
41	Union-Howard	101,336	915,742	554,476.35	5.47	.61
	Total—Trolley Coach Routes	223,433	1,986,524	$1,139,391.77	$5.10	$.57
	CABLE CARS					
59	Powell	35,270	179,644	$256,925.03	$7.28	$1.43
60	Jackson	46,732	256,180	327,544.99	7.01	1.28
	Total—Cable Cars	82,002	435,824	$584,470.02	$7.13	$1.34
	Total—Electric Car, Motor Coach, Trolley Coach and Cable Car	3,316,378	$30,476,886	$18,031,169.62	$5.44	$.59

*For changes in car and coach lines operated, see detail at end of statement entitled "Recapitulation of Passenger Traffic."

MUNICIPAL RAILWAY OF SAN FRANCISCO
COMPARISON STATEMENT OF PASSENGERS CARRIED, MILEAGE AND HOURS OPERATED
Fiscal Years 1947-1948 and 1948-1949

	1947-1948			1948-1949			Increase Decrease	Percentage Increase Decrease
	Fare	Transfers	Total	Fare	Transfers	Total		
PASSENGERS CARRIED								
Electric Cars	149,769,936	53,488,699	203,258,635	99,542,945	36,135,745	135,678,690	*67,579,945*	*33.248*
Cable Cars	6,508,077	3,385,273	9,893,350	6,611,577	3,569,377	10,180,954	287,604	2.907
Trolley Coaches	7,895,649	3,041,744	10,937,393	12,748,373	6,468,773	19,217,146	8,279,753	75.701
Motor Coaches	52,614,792	31,270,876	83,885,668	87,121,528	46,277,681	133,399,209	49,513,541	59.025
System Total	216,788,454	91,186,592	307,975,046	206,024,423	92,451,576	298,475,999	*9,499,047*	*3.084*
MILEAGE OPERATED								
Electric Cars	.....	.....	15,530,556	.....	.....	10,821,122	*4,709,434*	*30.324*
Cable Cars	.....	.....	436,424	.....	.....	435,824	*600*	*.137*
Trolley Coaches	.....	.....	1,331,994	.....	.....	1,986,524	654,530	49.139
Motor Coaches	.....	.....	11,767,885	.....	.....	17,233,416	5,465,531	46.444
System Total	.....	.....	29,066,859	.....	.....	30,476,886	1,410,027	4.851
HOURS OPERATED								
Electric Cars	.....	.....	1,768,879	.....	.....	1,230,066	*538,813*	*30.461*
Cable Cars	.....	.....	81,992	.....	.....	82,002	10	.012
Trolley Coaches	.....	.....	143,536	.....	.....	223,433	79,897	55.663
Motor Coaches	.....	.....	1,149,117	.....	.....	1,780,877	631,760	54.978
System Total	.....	.....	3,143,524	.....	.....	3,316,378	172,854	5.498

Italic figures denote loss and deficiency.

MUNICIPAL RAILWAY OF SAN FRANCISCO
RECEIPTS PER HOUR BY TYPES OF SERVICE

	Fiscal Year Ended June 30, 1949			Fiscal Year 1947-1948		
	Amount	Car or Coach Hours	Per Car or Coach Hour	Amount	Car or Coach Hours	Per Car or Coach Hour
STREET CARS		1,230,066			1,768,879	
Cash Fares and Registered Tokens	$8,634,954.21		$7.02	$12,300,058.11		$6.95
Total Passenger Receipts	8,835,381.43		7.18	12,551,712.82		7.10
Total Receipts—All Sources	8,977,394.77		7.30	12,709,568.87		7.19
MOTOR COACHES		1,780,877			1,149,117	
Cash Fares and Registered Tokens	7,672,353.62		4.31	4,298,240.89		3.74
Total Passenger Receipts	7,856,489.68		4.41	4,409,213.54		3.84
Total Receipts—All Sources	7,916,796.01		4.45	4,444,594.57		3.87
TROLLEY COACHES		223,433			143,536	
Cash Fares and Registered Tokens	1,139,391.77		5.10	644,592.68		4.49
Total Passenger Receipts	1,168,282.59		5.23	658,044.85		4.58
Total Receipts—All Sources	1,175,658.97		5.26	662,250.93		4.61
CABLE CARS		82,002			81,992	
Cash Fares and Registered Tokens	584,470.02		7.13	543,006.98		6.62
Total Passenger Receipts	596,305.76		7.27	552,551.02		6.74
Total Receipts—All Sources	599,337.27		7.31	555,016.49		6.77
ELECTRIC AND CABLE CARS AND MOTOR AND TROLLEY COACHES		3,316,378			3,143,524	
Cash Fares and Registered Tokens	18,031,169.62		5.44	17,785,898.66		5.66
Total Passenger Receipts	18,456,459.46		5.57	18,171,522.23		5.78
Total Receipts—All Sources	18,669,187.02		5.63	18,371,430.86		5.84

MUNICIPAL RAILWAY OF SAN FRANCISCO
RECAPITULATION OF PASSENGER TRAFFIC
July 1, 1948 to June 30, 1949
SYSTEM

	Number of Cash Fares	Number of Registered Tokens	Postal Employees	Chartered Coach Passengers	Excursion Tickets	School Tickets	10c Tickets	12½c Tickets	25c Tickets	Calif Street Cable Co. Transfers	Local Transfers	Total Passengers
Electric Car Lines	43,532,045	51,432,051	429,653	80	14,400	4,111,360	23,356	...	...	561,376	35,574,369	135,678,690
Cable Car Lines	3,420,495	2,911,533	10,518	.....	....	266,369	1,784	878	...	280,084	3,289,293	10,180,954
Trolley Coach Routes	7,706,611	4,446,545	37,674	.....	....	552,718	4,825	...	...	135,879	6,332,894	19,217,146
Motor Coach Routes	43,667,453	39,105,707	249,238	492,369	....	3,580,355	25,566	...	840	360,886	45,916,795	133,399,209
System Total	98,326,604	97,895,836	727,083	492,449	14,400	8,510,802	55,531	878	840	1,338,225	91,113,351	298,475,999

(Notes for Fiscal Year)

1948 PASSENGER TRAFFIC

July 6—No. 6-No. 7 Electric Street Car Line discontinued.
July 6—No. 10 Motor Coach Route discontinued.
July 11—No. 36 Motor Coach Route discontinued.
Aug. 1—No. 4, No. 22, No. 25, No. 27 Electric Street Car Lines discontinued.
Aug. 21—No. 27 Electric Street Car Line discontinued.
Oct. 31—No. 12 Electric Street Car Line discontinued.

1949

Jan. 15—No. 40 Electric Street Car Line discontinued.
Jan. 16—No. 9, No. 11, No. 14 Electric Street Car Lines converted to Motor Coach Operation.
Jan. 16—No. 22 Motor Coach Route converted to Trolley Coach Operation.
Jan. 26—5:00 a.m. Fare structure increased to 10c Fare, and age limit on school cards removed.
Feb. 2—Motor Coach No. 1 renumbered to No. 10.
Feb. 2—Motor Coach No. 2 renumbered to No. 16.
Feb. 2—Motor Coach No. 3 renumbered to No. 28.
Feb. 2—Motor Coach No. 5 renumbered to No. 34.
Feb. 2—Motor Coach No. 7 renumbered to No. 36.
Feb. 2—Motor Coach No. 8 renumbered to No. 37.
Feb. 2—Motor Coach No. 9 renumbered to No. 38.
Feb. 2—Motor Coach No. 11 renumbered to No. 39.
Feb. 2—Motor Coach No. 4E renumbered to No. 32.
Feb. 2—Motor Coach No. 6C renumbered to No. 35.
Feb. 1—Motor Coach No. 14 renumbered to No. 43.
Feb. 1—Trolley Coach "E" renumbered to No. 41.
Mar. 27—No. F—Motor Coaches substituted for Electric Street Cars after week day peak hours, and all day on Sundays and Holidays.
Motor Coach No. 59, 60, B, F, H, J, K, L, Emergency Service.

MUNICIPAL RAILWAY OF SAN FRANCISCO
STATEMENT OF CAR AND COACH MILEAGE AND CAR AND COACH HOURS OPERATED AND TOTAL PASSENGERS CARRIED

Period December 28, 1912 to June 30, 1949

Year	Car and Coach Mileage	Car and Coach Hours	Total Passengers Carried
12/28/12 to 12/31/13	1,300,869	129,050	9,723,177
1/ 1/14 to 12/31/14	3,282,012	362,333	27,933,049
1/ 1/15 to 6/30/15	3,112,910	368,841	24,670,130
7/ 1/15 to 6/30/16	6,358,543	737,214	47,886,784
7/ 1/16 to 6/30/17	5,317,270	580,717	36,234,723
7/ 1/17 to 6/30/18	6,935,090	766,997	62,396,036
7/ 1/18 to 6/30/19	7,212,763	779,746	59,341,253
7/ 1/19 to 6/30/20	7,419,272	795,578	66,169,246
7/ 1/20 to 6/30/21	7,538,737	806,761	69,960,834
7/ 1/21 to 6/30/22	7,677,307	811,292	70,757,908
7/ 1/22 to 6/30/23	8,148,703	853,157	73,633,760
7/ 1/23 to 6/30/24	8,676,611	900,224	77,736,617
7/ 1/24 to 6/30/25	8,897,271	921,280	79,900,645
7/ 1/25 to 6/30/26	9,302,073	961,451	83,390,908
7/ 1/26 to 6/30/27	9,428,522	975,949	83,603,652
7/ 1/27 to 6/30/28	9,657,311	999,243	85,281,171
7/ 1/28 to 6/30/29	9,903,754	1,028,345	85,683,664
7/ 1/29 to 6/30/30	10,186,213	1,054,514	87,673,608
7/ 1/30 to 6/30/31	10,114,999	1,042,925	85,250,762
7/ 1/31 to 6/30/32	9,770,683	995,524	80,123,238
7/ 1/32 to 6/30/33	9,251,492	918,120	71,815,286
7/ 1/33 to 6/30/34	8,875,788	876,820	73,063,608
7/ 1/34 to 6/30/35	8,937,287	883,914	78,849,085
7/ 1/35 to 6/30/36	8,751,421	867,581	79,116,866
7/ 1/36 to 6/30/37	8,763,838	872,873	80,754,084
7/ 1/37 to 6/30/38	9,212,687	919,678	90,290,519
7/ 1/38 to 6/30/39	9,810,068	1,003,126	107,739,849
7/ 1/39 to 6/30/40	10,058,316	1,049,720	111,305,527
7/ 1/40 to 6/30/41	10,266,038	1,064,439	108,822,011
7/ 1/41 to 6/30/42	10,389,525	1,083,008	113,956,341
7/ 1/42 to 6/30/43	11,322,394	1,191,164	142,896,226
7/ 1/43 to 6/30/44	12,100,522	1,278,151	167,348,356
7/ 1/44 to 6/30/45	24,811,168	2,678,453	295,306,166
7/ 1/45 to 6/30/46	29,454,947	3,197,392	326,007,393
7/ 1/46 to 6/30/47	30,063,299	3,263,950	314,623,064
7/ 1/47 to 6/30/48	29,066,859	3,143,524	307,975,046
7/ 1/48 to 6/30/49	30,476,886	3,316,378	298,475,999
12/28/12 to 6/30/49	411,853,448	43,479,432	4,065,696,591

MUNICIPAL RAILWAY OF SAN FRANCISCO
COMPARATIVE STATEMENT OF OPERATING DATA
Fiscal Year Ended June 30, 1949 and June 30, 1948

	Fiscal Year Ended June 30, 1949				Fiscal Year Ended June 30, 1948			
	Total	Ratio to Passenger Revenue	Per Car and Coach Mile	Per Car and Coach Hour	Total	Ratio to Passenger Revenue	Per Car and Coach Mile	Per Car and Coach Hour
Passenger Revenue	$18,456,459	100.000	.6056	5.5652	$18,171,522	100.000	.6252	5.7806
Operating Expense	17,812,207	96.509	.5844	5.3710	17,076,471	93.974	.5875	5.4323
Interest	107,195	.581	.0035	.0323	96,328	.530	.0033	.0306
Provision for Depreciation	1,450,311	7.858	.0476	.4373	1,087,841	5.987	.0374	.3461
Provision for Accidents	1,384,234	7.500	.0454	.4174	1,361,856	7.494	.0469	.4332
Taxes	21,018	.114	.0007	.0063	17,553	.097	.0006	.0056
Net Income	*2,307,833*	*12.504*	*.0757*	*.6959*	*1,507,837*	*8.298*	*.0519*	*.4797*
Passenger Car, Cable Car and Coach Mileage	30,476,886	.....	....	....	29,066,859	.....	....	....
Passenger Car, Cable Car and Coach Hours	3,316,378	.....	....	....	3,143,524	.....	....	....
Platform Expense: Passenger Car, Cable Car and Coach	8,127,989	44.039	.2667	2.4509	8,080,484	44.468	.2780	2.5705
Revenue Passengers Carried	206,024,423	.....	6.7600	62.1233	216,788,454	.....	7.4583	68.9635
Free Transfer Passengers Carried	92,451,576	.....	3.0335	27.8773	91,186,592	.....	3.1371	29.0078
Total Passengers Carried	298,475,999	.....	9.7935	90.0006	307,975,046	.....	10.5954	97.9713
Number of Employees				3,593				3,628
Rate of Fare Free Transfer				10c cash				8⅓c token

Miles of Single Track:	7/3/49	6/30/49	6/30/48
Owned and Operated (Including Spurs, Turnouts, Sidings, and Carhouse Tracks)			
Electric	87.625	120.510	222.534
Cable	6.792	6.792	6.792
Total	94.417	127.302	229.326
Owned Non-Operated			
Electric	143.951	111.066	62.662
Cable	0.051	0.051	2.360
Total	144.002	111.117	65.022
Total Single Track Owned	238.419	238.419	294.348
Motor Coach Routes:			
Round Trip Miles of Street Traversed	328.950	324.580	339.800
Trolley Coach Routes:			
Round Trip Miles of Street Traversed	69.610	36.100	24.460

	6/30/49	6/30/48
Number of Passenger Electric Cars Owned	347	553
Number of Passenger Cable Cars Owned	27	27
Number of Motor Coaches Owned	497	367
Number of Trolley Coaches Owned	248	58
Total Number of Passenger Equipment Units Owned	1,119	1,005
Number of Electric Work Cars Owned	20	23
Number of Motor Trucks Owned	51	52
Number of Passenger Automobiles Owned	24	24
Number of Motorcycles Owned	7	11
Number of Trailers Owned	29	29
Number of Tractors Owned	2	2
Number of Gasoline Rail Inspection Cars Owned	2	2
Total Number of Service Units Owned	135	143

Italic figures denote loss and deficiency.

MUNICIPAL RAILWAY OF SAN FRANCISCO
COST STATEMENT—ITEMIZED ACCOUNTS
Fiscal Year—July 1, 1948 to June 30, 1949

Acct. No.	Name	Amount	Per Car Mile	Per Car Hour
	ELECTRIC STREET CAR OPERATION ONLY			
	I—WAY AND STRUCTURES			
1	Superintendence of Way & Structures	$12,434.27	.00115	.01011
2	Ballast	422.42	.00004	.00034
3	Ties	2,317.17	.00021	.00188
4	Rails	6,227.61	.00058	.00506
5	Rail Fastenings and Joints	12,708.98	.00117	.01033
6	Special Work	1,980.41	.00018	.00161
7	Underground Construction	*2.20*	*.00000*	*.00000*
8	Track and Roadway Labor	261,177.82	.02414	.21233
9	Small Tools and Roadway Expenses	11,772.19	.00109	.00957
10	Paving	53,757.97	.00497	.04370
11	Cleaning and Sanding Tracks	44,550.65	.00412	.03622
13	Tunnels and Subways	2,144.53	.00020	.00174
15	Bridges, Trestles, and Culverts	62.50	.00001	.00005
16	Crossings, Fences, and Signs	3,817.33	.00035	.00310
17	Signals and Interlockers	6,038.90	.00056	.00491
18	Communication Systems—Repairs	2,969.54	.00027	.00241
19	Miscellaneous Way Expenses	99.40	.00001	.00008
22A	Overhead Feeders	6,853.69	.00063	.00557
22B	Underground Feeders	4,120.84	.00038	.00335
22C	Track Bonding	3,901.73	.00036	.00317
22D	Overhead Trolleys	60,783.86	.00562	.04942
22H	Poles and Fixtures	10,170.56	.00094	.00827
22I	Underground Conduits	145.72	.00001	.00012
23	Miscellaneous Electric Line Expenses	820.33	.00008	.00067
24C	Car Houses	13,548.02	.00125	.01101
24D	Shops	8,685.22	.00080	.00706
24E	General Offices	3,278.51	.00030	.00267
24F	Stations, Waiting Rooms, & Platforms	4,462.87	.00041	.00363
24H	Misc. Buildings and Structures	9,034.69	.00084	.00735
28	Transportation for Investment: Credit	*14,730.36*	*.00136*	*.01197*
28.3	Dismantling Retired Way & Structures	23,390.68	.00216	.01902
	Total Way and Structures	$556,945.85	.05147	.45278

Italic figures denote loss and deficiency.

Acct. No.	Name	Amount	Per Car Mile	Per Car Hour
	II—EQUIPMENT			
29	Superintendence of Equipment	$11,376.57	.00105	.00925
30	Passenger and Combination Cars	457,744.06	.04230	.37213
32	Service Equipment, Electric	1,301.84	.00012	.00106
33	Electric Equipment, Propulsion	170,597.86	.01577	.13869
36	Shop Equipment, Machinery and Tools	9,330.74	.00086	.00758
37	Shop Expenses	43,547.37	.00402	.03540
38	Maintenance of Automotive and Miscellaneous Equipment	15,488.10	.00143	.01259
41	Store Expense, Clearing	*4,284.41*	*.00039*	*.00348*
44.3	Dismantling Retired Equipment	9,668.43	.00089	.00786
	Total—Equipment	$714,770.56	.06605	.58108
	III—POWER			
45	Superintendence of Power	$9,037.67	.00083	.00735
46	Power Plant Buildings, Fixtures, and Grounds	843.05	.00008	.00069
47	Power Plant Equipment	1,297.85	.00012	.00105
52	Power Plant Employees	99,960.04	.00924	.08126
56	Misc. Supplies for Power	2,764.23	.00026	.00225
59	Power Purchased for Operation	667,834.01	.06172	.54293
59A	Power Purchased for Lighting Carbarns	6,753.80	.00062	.00549
59B	Power Purchased for Lighting Tunnels	2,748.52	.00025	.00223
	Total—Power	$791,239.17	.07312	.64325
	IV—CONDUCTING TRANSPORTATION			
63	Superintendence of Transportation	$287,546.23	.02657	.23376
64A	Conductors	2,225,702.17	.20568	1.80942
64B	Motormen	2,099,210.64	.19399	1.70658
66	Misc. Car Service Employees	7,078.80	.00065	.00575
67B	Lubricants and Waste	5,887.46	.00055	.00479
67C	Special Agents and Fare Registers	7,053.86	.00065	.00573
67D	Incandescent Lamps	1,918.77	.00018	.00156
67E	Cleaning Materials and Misc. Supplies	12,221.29	.00113	.00994
68	Station Employees	21,420.39	.00198	.01741
69	Station Expenses	3,598.86	.00033	.00293
70	Carhouse Employees: Cleaning, Washing, Greasing and Servicing	416,293.84	.03847	.33843
71	Building Expenses and Services	15,261.98	.00141	.01241
72	Operation of Signal and Interlocking Apparatus	9,087.39	.00084	.00739
73	Operation of Telephone and Central Control System	27,988.28	.00259	.02275
78	Other Transportation Expenses	9,208.65	.00085	.00749
	Total—Conducting Transportation	$5,149,478.61	.47587	4.18634

Italic figures denote loss and deficiency.

Acct. No.	Name	Amount	Per Car Mile	Per Car Hour
	VI—GENERAL AND MISCELLANEOUS			
83	Sal. and Exp. of General Officers	$20,167.90	.00186	.01639
84	Sal. and Exp. of General Clerks	137,788.29	.01273	.11202
85	General Office Supplies and Expenses	11,994.96	.00111	.00975
88	Pension Cost	593,379.16	.05484	.48240
88B	Sick Leave	250,683.94	.02317	.20380
88D	Sick Leave—Medical Fees	2,839.50	.00026	.00231
88E	Military Leave	847.34	.00008	.00069
89	Miscellaneous General Expenses	12,335.68	.00114	.01003
92D	Compensation—Injuries and Damages, Employees	49,988.46	.00462	.04064
93	Insurance	5,731.83	.00053	.00466
94	Stationery and Printing	10,096.42	.00093	.00821
94A	Tickets and Transfers	16,817.20	.00155	.01367
95	Store Expenses	40,597.18	.00375	.03300
96	Fuel and Servicing Auto Service Equip.	7,978.13	.00074	.00648
	Credit Charges to Trolley Coach Oper.	*2,833.39*	*.00026*	*.00230*
	Credit Charges to Motor Coach Oper.	*11,973.83*	*.00110*	*.00974*
	Credit Charges to Cable Car Oper.	*298.57*	*.00003*	*.00024*
	Total—General and Miscellaneous	$1,146,140.20	.10592	.93177
	RECAPITULATION—ELECTRIC STREET CAR OPERATION ONLY			
1A	Accounts 1 to 11 Inclusive	$407,349.49	.03764	.33116
1B	Accounts 13 to 28 Inclusive	149,596.36	.01383	.12162
I	Way and Structures—Total Accounts 1 to 28 Inclusive	556,945.85	.05147	.45278
II	Equipment	714,770.56	.06605	.58108
III	Power	791,239.17	.07312	.64325
IV	Conducting Transportation	5,149,478.61	.47587	4.18634
VI	General and Miscellaneous	1,146,140.20	.10592	.93177
	Total—Operating Expenses	$8,358,574.39	.77243	6.79522
	Provision for Depreciation $1,450,311.34			
	Less Applicable to Cable Cars and Coaches 1,046,362.36	$403,948.98	.03733	.32840
	Provision for Accidents $1,384,234.46			
	Less Applicable to Cable Cars and Coaches 721,580.84	662,653.62	.06124	.53871
	Interest Charges $107,194.79			
	Less Applicable to Cable Cars and Coaches 28,681.90	78,512.89	.00726	.06383
	Taxes—Electric Street Cars Only	21,017.67	.00194	.01709
	Total Costs—Electric Street Cars	$9,524,707.55	.88020	7.74325
	Car Mileage 10,821,122			
	Car Hours 1,230,066			

Italic figures denote loss and deficiency.

Acct. No.	Name	Amount	Per Car Mile	Per Car Hour
	CABLE STREET CAR OPERATION ONLY			
	I—WAY AND STRUCTURES			
C1	Superintendence of Way and Structures, C.C.	$535.82	.00123	.00654
C4	Rails	2,318.76	.00532	.02828
C5	Rail Fastenings and Joints	4,105.08	.00942	.05006
C7	Underground Construction	4,094.64	.00940	.04993
C8	Track and Roadway Labor	67,782.28	.15553	.82659
C9	Small Tools and Roadway Expenses	9.39	.00002	.00012
C10	Paving	10,022.40	.02300	.12222
C11	Cleaning and Sanding Tracks	38,127.66	.08748	.46496
C16	Crossings, Fences, and Signs	196.10	.00045	.00239
C17	Signals and Interlockers	1,210.63	.00278	.01476
C24C	Car Houses	7,777.10	.01784	.09484
C24D	Shops	458.23	.00105	.00559
C24E	General Offices	14.40	.00003	.00018
C24H	Misc. Buildings and Structures, C.C.	19.20	.00004	.00023
C28.3	Dismantling Retired Way and Structures, C.C.	318.12	.00073	.00388
	Total—Way and Structures	$136,989.81	.31432	1.67057
	II—EQUIPMENT			
C29	Superintendence of Equipment	$488.27	.00112	.00595
C30	Passenger and Combination Cars	36,835.93	.08452	.44921
C33	Grips and Dies, C.C.	17,214.55	.03950	.20993
C36	Shop Equipment, Machinery and Tools	248.29	.00057	.00303
C37	Shop Expenses	935.72	.00215	.01141
C38	Maintenance of Automotive and Miscellaneous Equipment	616.59	.00141	.00752
C41	Store Expense, Clearing	*300.48*	*.00069*	*.00367*
	Total—Equipment	$56,038.87	.12858	.68338
	III—POWER			
C45	Superintendence of Power	$6,342.31	.01455	.07734
C46	Power Plant Buildings, Fixtures and Grounds	185.53	.00043	.00226
C47-1	Power Plant Equipment	443.39	.00102	.00541
C47-2	Power Plant Equipment, Cables	44,328.36	.10171	.54058
C52	Power Plant Employees	33,074.56	.07589	.40334
C56	Miscellaneous Supplies for Power	667.09	.00153	.00814
C59	Power Purchased for Operation	15,875.10	.03642	.19359
	Total—Power	$100,916.34	.23155	1.23066
	IV—CONDUCTING TRANSPORTATION			
C63	Superintendence of Transportation	$31,263.88	.07174	.38126
C64	Cable Car Operators	277,121.48	.63586	3.37945
C66	Miscellaneous Car Service Employees	54.74	.00013	.00067
C67B	Lubricants and Waste	292.11	.00067	.00356

Italic figures denote loss and deficiency.

Acct. No.	Name	Amount	Per Car Mile	Per Car Hour
	IV—CONDUCTING TRANSPORTATION (Continued)			
C67C	Special Agents and Fare Registers....	288.25	.00066	.00351
C67D	Incandescent Lamps, C.C.....	3.60	.00001	.00004
C67E	Cleaning Materials and Misc. Supplies.	789.65	.00181	.00963
C69	Station Expenses	210.00	.00048	.00256
C70	Carhouse Employees: Cleaning, Washing, Greasing and Servicing...	25,949.47	.05954	.31645
C71	Building Expenses and Services.....	578.67	.00133	.00706
C72	Operation of Signal and Interlocking Apparatus	9,653.96	.02215	.11773
C73	Operation of Telephone and Central Control System.....	1,126.05	.00258	.01373
C78	Other Transportation Expenses.....	21.35	.00005	.00026
	Total—Conducting Transportation	$347,353.21	.79701	4.23591
	VI—GENERAL AND MISCELLANEOUS			
C83	Sal. and Exp. of General Officers.....	$806.73	.00185	.00984
C84	Sal. and. Exp. of General Office Clerks.	5,534.77	.01270	.06750
C85	General Office Supplies and Expenses..	502.83	.00115	.00613
C88	Pension Cost	39,510.00	.09066	.48182
C88B	Sick Leave	7,957.12	.01826	.09704
C88D	Sick Leave—Medical Fees.....	189.83	.00044	.00231
C89	Miscellaneous General Expenses.....	491.60	.00113	.00599
C92D	Compensation—Injuries and Damages, Employees	3,375.28	.00774	.04116
C93	Insurance	284.08	.00065	.00346
C94	Stationery and Printing.....	418.80	.00096	.00511
C94A	Tickets and Transfers.....	840.42	.00193	.01025
C95	Store Expenses	1,493.70	.00343	.01821
C96	Fuel & Servicing Auto Service Equip..	334.25	.00077	.00408
C98A	Use of Street Car Facilities.....	298.57	.00068	.00364
	Total—General and Miscellaneous	$62,037.98	.14235	.75654
	RECAPITULATION—CABLE CAR OPERATION ONLY			
IA	Accounts 1 to 11 Inclusive.....	$126,996.03	.29139	1.54870
IB	Accounts 13 to 28 Inclusive.....	9,993.78	.02293	.12187
I	Way and Structures—Total Accounts 1 to 28 Inclusive.....	136,989.81	.31432	1.67057
II	Equipment	56,038.87	.12858	.68338
III	Power	100,916.34	.23155	1.23066
IV	Conducting Transportation	347,353.21	.79701	4.23591
VI	General and Miscellaneous.....	62,037.98	.14235	.75654
	Total—Operating Expenses	$703,336.21	1.61381	8.57706
	Provision for Depreciation.....	$24,116.15	.05533	.29409
	Provision for Accidents.....	44,722.92	.10262	.54539
	Interest Charges	3,792.28	.00870	.04625
	Total Costs—Cable Street Cars.....	$775,967.56	1.78046	9.46279

Cable Street Car Mileage.....435,824
Cable Street Car Hours..... 82,002

Acct. No.	Name	Amount	Per Coach Mile	Per Coach Hour
	MOTOR COACH OPERATION ONLY			
	I—WAY AND STRUCTURES			
B1	Superintendence and Engineering, M.C.	$21,950.70	.00127	.01232
B10	Paving, M.C.	12,444.77	.00072	.00699
B11	Cleaning, Sanding Tracks, Roadway, M.C.	618.36	.00004	.00035
B16	Crossings, Fences, and Signs	1,658.78	.00010	.00093
B18	Communication Systems—Repairs	36.63	.00000	.00002
B24C	Storage Facilities, M.C.	7,141.66	.00041	.00401
B24D	Shops	8,787.74	.00051	.00493
B24E	General Offices	439.15	.00003	.00025
B24F	Stations, Waiting Rooms & Platforms.	104.38	.00001	.00006
B24H	Misc. Buildings and Structures.	187.84	.00001	.00011
	Total—Way and Structures	$53,370.01	.00310	.02997
	II—EQUIPMENT			
B29	Superintendence of Equipment.	$19,964.35	.00116	.01121
B30	Fare Boxes, M.C.	10,438.77	.00060	.00586
B36	Shop Equip., Machinery & Tools, M.C..	6,908.76	.00040	.00388
B37	Shop Expenses, M.C.	22,342.46	.00130	.01255
B38	Maintenance of Automotive and Miscellaneous Equipment, M.C.	24,234.15	.00141	.01361
B39A	Motor Coach Engines	423,806.16	.02459	.23798
B39B	Painting Coaches	19,532.26	.00113	.01097
B39C	Axles, Wheels and Springs, Labor and Material, M.C.	76,964.87	.00447	.04322
B39D	Tires & Tubes Including Repairs, M.C.	311,929.21	.01810	.17515
B39E	Bodies, Labor and Material, M.C.	140,559.03	.00816	.07893
B39G	Motor Coach Transmissions Including Rear Axles	74,883.47	.00434	.04205
B39H	Brakes, Labor and Material, M.C.	95,603.54	.00555	.05368
B41	Store Expense, Clearing	*6,705.49*	*.00039*	*.00377*
	Total—Equipment	$1,220,461.54	.07082	.68532
	III—POWER			
B53	Gasoline and Diesel Fuel, M.C.	$1,126,660.52	.06537	.63264
B59A	Power Purchased for Lighting Carhouses	4,613.92	.00027	.00259
	Total—Power	$1,131,274.44	.06564	.63523

Italic figures denote loss and deficiency.

Acct. No.	Name	Amount	Per Coach Mile	Per Coach Hour
	IV—CONDUCTING TRANSPORTATION			
B63	Superintendence of Transportation...	$576,907.96	.03348	.32395
B64	Coach Operators	3,129,574.75	.18160	1.75732
B67B	Lubricants and Waste	45,609.46	.00265	.02561
B67C	Special Agents and Fare Registers....	11,495.59	.00067	.00646
B67D	Incandescent Lamps, M.C.....	1.81	.00000	.00000
B67E	Cleaning Materials and Misc. Supplies.	14,029.51	.00081	.00788
B69	Station Expenses	1,589.50	.00009	.00089
B70	Carhouse Employees: Cleaning, Washing, Greasing and Servicing...	556,280.66	.03228	.31236
B71	Building Expenses and Services.....	8,717.33	.00051	.00490
B72	Operation Signal and Interlocking Apparatus, M.C.	55.73	.00000	.00003
B73	Operation of Telephone and Central Control System.....	44,501.86	.00258	.02499
B78	Other Transportation Expenses.....	20,325.50	.00118	.01141
	Total—Conducting Transportation	$4,409,089.66	.25585	2.47580
	VI—GENERAL AND MISCELLANEOUS			
B83	Sal. and Exp. of General Officers.....	$31,779.70	.00184	.01784
B84	Sal. and Exp. of General Office Clerks.	218,417.84	.01267	.12265
B85	General Office Supplies and Expenses..	20,293.21	.00118	.01140
B88	Pension Cost	428,795.62	.02488	.24078
B88B	Sick Leave.....	80,040.22	.00464	.04494
B88D	Sick Leave—Medical Fees.....	2,064.98	.00012	.00116
B88E	Military Leave	1,690.01	.00010	.00095
B89	Miscellaneous General Expenses.....	19,501.68	.00113	.01095
B92D	Compensation—Injuries and Damages, Employees	36,988.30	.00215	.02077
B93	Insurance	20,299.47	.00118	.01140
B94	Stationery and Printing.....	16,807.69	.00098	.00944
B94A	Tickets and Transfers.....	28,128.73	.00163	.01579
B95	Store Expenses	64,615.76	.00375	.03628
B96	Fuel and Servicing Auto Service Equip.	13,492.21	.00078	.00758
B98A	Use of Street Car Facilities.....	11,973.83	.00070	.00672
	Total—General and Miscellaneous	$994,889.25	.05773	.55865
	RECAPITULATION—MOTOR COACH OPERATION ONLY			
I	Way and Structures.....	$53,370.01	.00310	.02997
II	Equipment	1,220,461.54	.07082	.68532
III	Power	1,131,274.44	.06564	.63523
IV	Conducting Transportation	4,409,089.66	.25585	2.47580
VI	General and Miscellaneous.....	994,889.25	.05773	.55865
	Total—Operating Expenses	$7,809,084.90	.45314	4.38497
	Provision for Depreciation.....	$912,230.94	.05293	.51223
	Provision for Accidents.....	589,236.73	.03419	.33087
	Interest Charges	19,051.45	.00111	.01070
	Total Costs—Motor Coaches.....	$9,329,604.02	.54137	5.23877

Motor Coach Mileage.....17,233,416
Motor Coach Hours..... 1,780,877

Acct. No.	Name	Amount	Per Coach Mile	Per Coach Hour
	TROLLEY COACH OPERATION ONLY			
	I—WAY AND STRUCTURES			
T1	Superintendence and Engineering, T.C.	$2,789.83	.00140	.01249
T10	Paving, T.C.	652.21	.00033	.00292
T11	Cleaning and Sanding Tracks, T.C.	50.55	.00003	.00023
T16	Crossings, Fences and Signs, T.C.	1,249.43	.00063	.00559
T18	Communication Systems—Repairs	47.77	.00002	.00021
T22A	Overhead Feeders, T.C.	1,283.07	.00065	.00574
T22B	Underground Feeders, T.C.	183.70	.00009	.00082
T22E	Overhead Trolleys	18,092.86	.00911	.08098
T22H	Poles and Fixtures, T.C.	909.73	.00046	.00407
T24C	Storage Facilities, T.C.	3,068.90	.00154	.01373
T24D	Shops	1,709.42	.00086	.00765
T24E	General Offices, T.C.	71.69	.00004	.00032
T24F	Stations, Waiting Rooms and Platforms, T.C.	25.92	.00001	.00012
T24H	Misc. Buildings and Structures, T.C.	972.18	.00049	.00435
T28.3	Dismantling Retired Way and Structures, T.C.	37.00	.00002	.00017
	Total—Way and Structures	$31,144.26	.01568	.13939
	II—EQUIPMENT			
T29	Superintendence of Equipment, T.C.	$2,522.45	.00127	.01129
T30	Misc. Equipment Repairs, T.C.	3,630.26	.00183	.01625
T30A	Painting—Coaches	3,566.90	.00179	.01596
T30B	Bodies, Labor and Material—Coaches	17,117.38	.00862	.07661
T30C	Axles, Wheels and Springs, Labor and Material, Coaches	13,639.06	.00687	.06104
T30D	Tires and Tubes, Including Repairs, Coaches	43,709.56	.02200	.19563
T30E	Brakes, Labor and Material—Coaches	4,100.14	.00206	.01835
T33	Electric Equipment Propulsion	15,145.73	.00762	.06779
T36	Shop Equipment, Machinery and Tools	235.71	.00012	.00105
T37	Shop Expenses	1,854.64	.00093	.00831
T38	Maintenance of Automotive and Miscellaneous Equipment	2,736.47	.00138	.01225
T41	Store Expense, Clearing, T.C.	*937.73*	*.00047*	*.00420*
	Total—Equipment	$107,320.57	.05402	.48033
	III—POWER			
T45	Superintendence of Power	$1,882.47	.00095	.00842
T46	Power Plant Buildings, Fixtures and Grounds, T.C.	104.69	.00005	.00047
T47	Power Plant Equipment, T.C.	183.49	.00009	.00082
T52	Power Plant Employees	18,531.26	.00933	.08294
T56	Miscellaneous Supplies for Power, T.C.	314.39	.00016	.00141
T59	Power Purchased for Operation	88,580.64	.04459	.39645
T59A	Power Purchased for Lighting Carbarns, T.C.	1,199.93	.00060	.00537
	Total—Power	$110,796.87	.05577	.49588

Italic figures denote loss and deficiency.

Acct. No.	Name	Amount	Per Coach Mile	Per Coach Hour
	IV—CONDUCTING TRANSPORTATION			
T63	Superintendence of Transportation...	$85,748.07	.04317	.38377
T64	Coach Operators	396,380.33	.19954	1.77405
T66	Misc. Car Service Employees.....	63.07	.00003	.00028
T67B	Lubricants and Waste.....	716.01	.00036	.00320
T67C	Special Agents and Fare Registers....	1,358.98	.00068	.00608
T67D	Incandescent Lamps	28.20	.00001	.00013
T67E	Cleaning Materials and Misc. Supplies.	3,183.77	.00160	.01425
T69	Station Expenses	413.38	.00021	.00185
T70	Carhouse Employees: Cleaning, Washing, Greasing, Servicing.....	64,962.98	.03270	.29075
T71	Building Expenses and Services.....	194.19	.00010	.00087
T73	Operation of Telephone and Central Control System.....	5,119.71	.00258	.02291
T78	Other Transportation Expenses.....	2,582.26	.00130	.01156
	Total—Conducting Transportation	$560,750.95	.28228	2.50970
	VI—GENERAL AND MISCELLANEOUS			
T83	Sal. and Exp. of General Officers.....	$3,601.48	.00181	.01612
T84	Sal. and Exp. of General Office Clerks..	25,086.49	.01263	.11228
T85	General Office Supplies and Expenses..	2,466.97	.00124	.01104
T88	Pension Cost	53,618.08	.02699	.23997
T88B	Sick Leave.....	18,891.36	.00951	.08455
T88D	Sick Leave—Medical Fees.....	260.69	.00013	.00117
T88E	Military Leave, T.C.....	124.80	.00006	.00056
T89	Miscellaneous General Expenses.....	2,196.70	.00111	.00983
T92D	Compensation—Injuries and Damages, Employees	4,749.29	.00239	.02126
T93	Insurance	2,809.63	.00142	.01258
T94	Stationery and Printing.....	2,041.57	.00103	.00914
T94A	Tickets and Transfers.....	3,401.37	.00171	.01522
T95	Store Expenses	7,472.09	.00376	.03344
T96	Fuel and Servicing Auto Service Equip.	1,645.44	.00083	.00736
T98A	Use of Street Car Facilities.....	2,833.39	.00143	.01268
	Total—General and Miscellaneous	$131,199.35	.06605	.58720
	RECAPITULATION—TROLLEY COACH OPERATION ONLY			
I	Way and Structures.....	$31,144.26	.01568	.13939
II	Equipment	107,320.57	.05402	.48033
III	Power	110,796.87	.05577	.49588
IV	Conducting Transportation	560,750.95	.28228	2.50970
VI	General and Miscellaneous.....	131,199.35	.06605	.58720
	Total—Operating Expenses	$941,212.00	.47380	4.21250
	Provision for Depreciation.....	$110,015.27	.05538	.49239
	Provision for Accidents.....	87,621.19	.04411	.39216
	Interest Charges	5,838.17	.00294	.02613
	Total Costs—Trolley Coaches.....	$1,144,686.63	.57623	5.12318

Trolley Coach Mileage.....1,986,524
Trolley Coach Hours..... 223,433

RECAPITULATION—SYSTEM
ELECTRIC AND CABLE STREET CARS AND MOTOR AND TROLLEY COACHES

	Amount	Per Coach or Car Mile	Per Coach or Car Hour
Operating Expense	$17,812,207.50	.58445	5.37098
Provision for Depreciation	1,450,311.34	.04759	.43732
Provision for Accidents	1,384,234.46	.04542	.41739
Interest Charges	107,194.79	.00351	.03232
Taxes	21,017.67	.00069	.00634
Grand Total	$20,774,965.76	.68166	6.26435

Total Operating Expense—Electric and Cable Street Cars and Motor and Trolley Coaches	$17,812,207.50
Total Electric and Cable Street Car and Motor and Trolley Coach Mileage	30,476,886
Total Electric and Cable Street Car and Motor and Trolley Coach Hours	3,316,378
Total Expense per Electric and Cable Street Car and Motor and Trolley Coach Mile	.58445
Total Expense per Electric and Cable Street Car and Motor and Trolley Coach Hour	5.37098

	Mileage	Hours
Electric Street Cars	10,821,122	1,230,066
Cable Street Cars	435,824	82,002
Trolley Coaches	1,986,524	223,433
Motor Coaches	17,233,416	1,780,877
Total	30,476,886	3,316,378

Gross Operating Revenue	$18,592,096.33
Total Operating Expense	17,812,207.50
Ratio of Operating Expense to Gross Revenue	.96

MUNICIPAL RAILWAY OF SAN FRANCISCO
SINGLE TRACK ELECTRIC AND CABLE MILEAGE AND ROUND-TRIP MILES AND STREET TRAVERSED BY MOTOR AND TROLLEY COACHES
July 3, 1949

	Operated	Non Operated	Total
MUNICIPAL RAILWAY DIVISION—ELECTRIC			
Main Track	64.878	5.742	70.620
Sidings and Turnouts	0.187	0.026	0.213
Car Houses	2.002	....	2.002
Total	67.067	5.768	72.835
MARKET STREET EXTENSION DIVISION—ELECTRIC			
Main Track—San Francisco County	*15.118	†108.132	123.250
Main Track—San Mateo County	....	26.984	26.984
Sidings and Turnouts—San Francisco County	0.148	0.055	0.203
Sidings and Turnouts—San Mateo County	....	0.134	0.134
Car Houses—San Francisco County	5.292	2.878	8.170
Total	20.558	138.183	158.741
Total Single Track—Electric	87.625	143.951	231.576
MARKET STREET EXTENSION DIVISION—CABLE			
Main Track	6.206	....	6.206
Car House and Shops	0.586	0.051	0.637
Total Single Track—Cable	6.792	0.051	6.843
Total Single Track—Electric and Cable	94.417	144.002	238.419
INCLUDED ABOVE			
Market Division Track Reconstructed by Municipal Railway			
*Market Street	5.678	....	....
*Church Street	0.359	....	....
†Mission Street	....	.0520	....

Motor Coach Routes—Round-trip Miles of Street Traversed 328.95

Trolley Coach Routes—Round-trip Miles of Street Traversed 69.61

Total Coach Routes—Round-trip Miles of Street Traversed 398.56

MUNICIPAL RAILWAY OF SAN FRANCISCO
TROLLEY COACH OPERATIONS
MILES OF NEGATIVE TROLLEY WIRE
As of July 3, 1949

Line		Route Miles	Duplicated Miles	Net Miles Negative Wire
	Revenue Miles			
5	McAllister	14.24	2.77	11.47
6	Masonic	12.57	6.95	5.62
7	Haight	8.15	4.63	3.52
8	Market-Castro	6.92	.05	6.87
21	Hayes	10.71	4.45	6.26
22	Fillmore	11.41	...	11.41
33	Ashbury	10.17	...	10.17
41	Union-Howard	14.29	...	14.29
		88.46	18.85	69.61

Loops, Spurs, Etc.	
Van Ness, McAllister to Hayes	.20
Gough	.20
Larkin	.39
Leavenworth Loop	.20
Sutter Loop	.22
Kansas Loop	.13
Ball Park Spur	.20
	1.54
Non Revenue	
Connections from Potrero Car House to Lines	1.74
Car House and Yard:	
Mariposa Level and 17th Street Level	1.72
Total Miles of Negative Trolley Wire	74.61

MUNICIPAL RAILWAY OF SAN FRANCISCO

CHRONOLOGY

December 2, 1902.—Election. Proposition authorizing $700,000 bonds defeated.

October 8, 1903.—Election. Proposition authorizing $710,000 bonds defeated.

November 6, 1903.—Franchise of Geary Street, Park and Ocean Railroad Company expired.

June, 1906.—Budget appropriation $325,000 for Geary Street Railroad. Used for reconstruction and rehabilitation of streets and buildings destroyed in disaster of April 18-22, 1906.

June, 1907.—Budget appropriation $720,000 for Geary Street Railroad. Subsequently declared invalid by court.

June 24, 1909.—Election. Proposition authorizing $1,950,000 bonds defeated, lacking 203 votes.

December 30, 1909.—Election. Proposition authorizing $2,020,000 bonds carried by 20,000 majority.

April 16, 1910.—Superior Court declares bond issue valid in every respect. Decision affirmed by Supreme Court in July, 1910.

July 18, 1910.—First lot of bonds, $121,000 sold.

Summer, 1911.—Construction of Geary Street Railroad commenced.

May 5, 1912.—The Geary Street, Park & Ocean Railroad (cable system) ceased operations.

December 28, 1912.—The Municipal Railway (overhead trolley system) commenced operation on Geary Street from Kearny Street to Thirty-third Avenue and Park, with ten (10) cars, under direction of Thomas A. Cashin, Superintendent, Mayor James Rolph, Jr., acting as motorman on first car.

April 22, 1913.—Referendum election. Agreement with Sutter Street Railroad Company respecting use of tracks on lower Market Street ratified.

June 25, 1913.—Municipal Railway in full operation from Ferries to Beach and Park. Forty-three cars owned.

August 26, 1913.—Election. Proposition authorizing $3,500,000 bonds for extensions of Municipal Railway carried by 37,670 majority.

December 11, 1913.—Presidio & Ferries R. R. Company (Union Street Division) taken over by Municipal Railway.

May 16, 1914.—Masonic Avenue branch completed.

August 15, 1914.—Van Ness Avenue line from Market Street in operation to Exposition grounds.

September 7, 1914.—Potrero Avenue line in operation, Eleventh and Market Streets to Twenty-fifth Street and Potrero Avenue.

December 29, 1914.—Stockton Street, Columbus Avenue and North Point line in operation through tunnel.

December 29, 1914.—Fort Mason Loop commenced operation.

February 10, 1915.—Columbus Avenue line in operation from Ferries to Exposition grounds.

February 19, 1915.—California Street line in operation to Thirteenth Avenue.

March 28, 1915.—California Street line in operation to Thirty-third Avenue.

April 25, 1915.—Beach loop, Geary Street line, commenced operation.

January 24, 1916.—Stockton Street branch ("E") in operation from Presidio to Market, Fourth and Ellis Streets.

April 29, 1916.—Church Street line (Sect. "C"), Sixteenth to Eighteenth and Twenty-second to Thirtieth Streets, ready for operation.

June 1, 1916.—Columbus Avenue ("J" line), Ferries to Exposition grounds discontinued.

June 12, 1916.—Church Street line (Sect. "A"), Van Ness Avenue and Market Street to Sixteenth and Church Streets, started by day labor. Held up by United Railroads injunction.

June 28, 1916.—Church Street line (Sect. "B"), Eighteenth to Twenty-second Streets, ready for operation.

December 21, 1916.—Potrero Avenue line ("H") extended from Twenty-fifth Street to Army Street. Twenty-two hundredths mile added. Placed in operation January 19, 1917.

August 11, 1917.—Church Street line ("J"), Van Ness Avenue and Market Street to Church and Thirtieth Streets, commenced operation.

February 3, 1918.—Twin Peaks tunnel line ("K") to Van Ness Avenue and Bush Street commenced operation. (Length of tunnel 11,920 feet.)

May 4, 1918.—Greenwich Street extension (Van Ness Avenue line), Scott to Baker Street, commenced operation.

June 1, 1918.—Market Street lines ("J" and "K"), Van Ness Avenue to Geary Street, commenced operation, establishing through service, Ferries to Sloat Boulevard.

October 30, 1918.—Third loop opened at Ferry terminus.

February 21, 1919.—Market Street line ("K") commenced operation over United Railroads' tracks on Ocean Avenue to Miramar Avenue.

April 12, 1919.—Taraval Street line ("L") commenced operation from West Portal of Twin Peaks tunnel to Thirty-third Avenue, operating co-jointly with the United Railroads on Taraval Street between Twentieth Avenue and Thirty-third Avenue.

May 18, 1919.—Market Street line ("K") commenced operation over extension along Ocean and Brighton avenues to Grafton Avenue.

July 22, 1919.—Changed and shortened route of Van Ness Avenue line ("D") and Union Street line ("E") by track connection on Union Street between Franklin Street and Van Ness Avenue.

August 7, 1919.—One elevator placed in operation at Forest Hill station of Twin Peaks tunnel.

December 8, 1919.—Presidio loop, Van Ness Avenue and Union Street lines, commenced operation.

January 14, 1923.—Taraval Street line ("L") commenced operation over extension on Taraval Street, between Thirty-third Avenue and Ocean Beach.

October 15, 1923.—Taraval Street line ("L") operated as a through line from Beach to Ferries via Twin Peaks tunnel and Market Street.

October 6, 1925.—Line "M" commenced operation between Plymouth Avenue and Broad Street to St. Francis Circle.

February 1, 1928.—Second elevator (the largest on the Pacific Coast) installed at Forest Hill station of Twin Peaks tunnel.

October 21, 1928.—Line "N" commenced operation between Forty-eighth Avenue and Judah Street and the Ferries.

January 8, 1932.—Jurisdiction over the San Francisco Municipal Railway was transferred from the Board of Public Works to the San Francisco Public Utilities Commission under provisions of the new Charter.

June 1, 1932.—Line "O" commenced operation between Van Ness Avenue and Market Street and the Presidio (a rearrangement of lines "D," "E," and "H").

July 15, 1932.—Line "O" abandoned and lines "D," "E" and "H" placed on their original routing.

December 5, 1932.—Line "A" discontinued.

December 5, 1932.—Bus Route No. 1 extended to Tenth Avenue and Lake Street.

January 3, 1933.—Bus Route No. 2 discontinued.

January 30, 1933.—Bus Route No. 1 North Terminal changed to Tenth Avenue and California Street.

December 5, 1933.—Bus Route No. 1 South Terminal changed to Edna Street and Monterey Boulevard.

July 28, 1935.—Bus Route No. 6 commenced operation, Eureka Valley Station to Diamond and Clipper streets.

September 15, 1937.—Line "L" extension to Fleishhacker Pool commenced operation.

January 1, 1938.—Bus Route No. 5 Marina Route routed over Broderick Street instead of Divisadero Street.

May 8, 1938.—Bus Route No. 6 South Terminal changed to Diamond and Duncan streets.

January 15, 1939.—Bay Bridge trains started operation to Bridge Terminal. Alternate Municipal Railway cars operated over Bay Bridge loop.

June 25, 1939.—Bus Route No. 6 rerouted over Castro, Nineteenth, Eureka, Twenty-third, Diamond, Clipper, Church, Twenty-fifth, Collingwood, and Market streets.

July 9, 1939.——Bus Route No. 8 commenced operation from Judah Street and Seventeenth Avenue to Taraval Street and Fifteenth Avenue.

July 23, 1939.—Bus Route No. 7 commenced operation from Forest Hill Station to Rio Court.

July 30, 1939.—Bus Route No. 11 commenced operation from Union and Powell streets to Coit Tower, Telegraph Hill.

August 6, 1939.—Bus Route No. 9 commenced operation from Potrero Avenue and Army Street to Bacon and Somerset streets.

August 6, 1939.—Bus Route No. 10 commenced operation from Balboa Terrace to San Jose Avenue and Plymouth Avenue.

August 6, 1939.—Car line "M" discontinued and replaced by Bus Route No. 10.

August 24, 1939.—Bus Route No. 10 Northern Terminal extended from Balboa Terrace to St. Francis Circle.

October 14, 1939.—Bus Route No. 6 Southern Terminal extended to South Van Ness Avenue and Twenty-third Street.

October 15, 1939.—Bus Route No. 10 Southern Terminal extended to Sickles Avenue and Mission Street.

October 30, 1939.—Bus Route No. 9 Southern Terminal extended to San Bruno Avenue and Ware Street.

December 27, 1939.—Five new modern stream-lined passenger cars were placed in service.

July 2, 1940.—Bus Route No. 12 commenced operation from Beale and Howard streets to Army Street and South Van Ness Avenue.

July 7, 1940.—Bus Route No. 12 Eastern Terminal extended from Beale and Howard streets to Market Street and the Embarcadero.

November 18, 1940.—Bus Route No. 1 extended to San Francisco Junior College on school days.

January 1, 1941.—Lines "B," "D," "K," and "N" Eastern Terminal changed to Bridge Terminal, and lines "C," "J," and "L" Eastern Terminal changed to Ferry Terminal from alternate cars of each line to Bridge and Ferry Terminals.

March 23, 1941.—Bus Route No. 2 commenced operation from Twenty-second Avenue and Irving Street to Thirty-fifth Avenue and Noriega Street.

March 23, 1941.—Bus Route No. 3 commenced operation from Thirtieth and Church streets to Sickles and Huron avenues.

March 23, 1941.—Bus Route No. 8 discontinued.

March 23, 1941.—Bus Route No. 10 Northern Terminal extended from St. Francis Circle to Nineteenth Avenue and Irving Street.

April 6, 1941.—Bus Route No. 14 commenced operation from Noe Street and Duboce Avenue to Haight and Belvedere streets.

May 5, 1941.—Bus Route No. 3 changed from Church Street, Day Street, and Dolores Street to Thirtieth Street, Sanchez Street and Randall Street.

May 19, 1941.—Bus Route No. 14 Eastern Terminal changed from Noe Street and Duboce Avenue to Church and Market streets.

June 8, 1941.—Bus Route No. 7 Southern Terminal changed from Rio Court to Teresita Boulevard and Melrose Avenue.

September 7, 1941.—Line "R" commenced operation with trolley coaches from Army Street and South Van Ness Avenue to Beale and Howard streets.

September 7, 1941.—Bus Route No. 12 discontinued between Army Street and Beale Street.

September 8, 1941.—Bus Route No. 12 operated as a shuttle service from line "R" between Beale and Howard streets and Market Street and the Embarcadero.

September 29, 1941.—Bus Route No. 14 changed between Seventeenth and Ashbury Streets and Cole and Carl Streets.

December 8, 1941.—Bus Route No. 10 extended to Twenty-fifth Avenue and California Street.

January 4, 1942.—Bus Route No. 10 consolidated with Bus Route No. 3. Bus Route No. 10 discontinued.

January 4, 1942.—Bus Route No. 12 (shuttle) discontinued.

March 16, 1942.—Ferry Terminal outside loop discontinued.

April 12, 1942.—Bus Route No. 3 extended to Sea Cliff Avenue.

May, 1942.—Outside loop at Ferry removed.

June 10, 1942.—Bay Bridge Terminal—middle loop and switch tower discontinued.

July, 1942.—Present outside loop at Ferry connected to tracks of Embarcadero North Terminal.

December 1, 1942.—Mutual interchange of transfers in effect with all lines of the California Street Cable Railroad Company.

February 10, 1943.—Bus Route No. 6 changed between Diamond and Duncan streets and Castro and Twenty-fifth streets.

August 8, 1943.—Mutual interchange of transfers with the California Cable Railroad Company which went into effect December 1, 1942, was discontinued.

May 16, 1944.—Primary and Special Election. Purchase of operative properties of the Market Street Railway by payment of $2,000,000 in cash and $5,500,000 from earnings of acquired Market Street Railway properties. Approved. For—108,621; Against—84,078; a majority of 24,543.

A summary of other elections which failed of passage from November 3, 1925, to April 20, 1943, for purchase of the Market Street Railway Company properties and for Municipal Railway expansion follows:

November 3, 1925.—General Municipal Election. Initiative measure for bond issue of $36,000,000 for purchase of Market Street Railway Company's properties. Not approved. For—12,435; Against—87,315.

June 14, 1927.—Special Election for bond issue of $4,700,000 for extensions to the Municipal Railway. Not approved. For—44,412; Against—25,791.

November 7, 1933.—General and Special Election for bond issue of $63,000 for extension of line from Taraval Street and Forty-sixth Avenue. Not approved. For—76,438; Against—68,330.

November 2, 1937.—General Election for bond issue for $49,250,000 for constructing subways and acquiring a Rapid Transit System. Not approved. For—68,834; Against—95,246.

September 27, 1938.—Special Election—Proposition No. 8—Bond issue of $24,480,000 to purchase operating properties of the Market Street Railway Company. Not approved. For—52,680; Against—93,979.

November 8, 1938.—General Election. Declaration of policy—Proposition No. 4—Purchase of Market Street Railway Company operating property for an amount not exceeding $5,000,000. Not approved. For—49,932; Against—128,320.

Proposition No. 5—Declaration of policy—City to issue $9,000,000 bonds for passenger buses and facilities therefor to be used with property of the Market Street Railway Company if acquired or as adjunct of Municipal Railway. Not approved. For—49,948; Against—128,466.

November 3, 1942.—General Election. Acquisition of operative properties of Market Street Railway Company financed by issuance of revenue bonds in amount $7,950,000. Not approved. For—96,003; Against—102,081.

April 20, 1943.—Special Election. Purchase of operative properties of Market Street Railway Company for $7,950,000 to be financed by issuance of revenue bonds. Not approved. For—53,619; Against—88,418.

September 29, 1944.—At 5:00 a.m. on this date, the operative properties of the Market Street Railway Company system were merged with those of the Municipal Railway system and were operated as a consolidated system.

October 15, 1944.—Free interchange of transfers in effect with lines of the California Street Cable Railroad; fare on that company's lines increased to 7 cents.

December 11, 1944.—Contract was awarded for the removal of the outer tracks and the replacement of the inner tracks on Market Street, Valencia Street to Castro Street. Work was performed under Municipal Railway contract No. 192—replacement job No. 1410, and was completed October 25, 1945.

December 17, 1944.—Line "M" (Ocean View) reestablished operation which had been discontinued on August 6, 1939.

January 7, 1945.—All motor coach operations, including maintenance, repairs, housing, and dispatching, centralized at the 24th and Utah Streets garage, and garage at 3708 Geary Boulevard discontinued.

August 15, 1945.—Gasoline rationing ended.

December 30, 1945.—Tire rationing ended.

May 20, 1946.—Fare rate increased from 7 cents cash or token to 10 cents cash or 8⅓ cents token rate.

June 30, 1946, to July 3, 1946, Inclusive.—No operation for four days on account of strike conditions.

October 6, 1946.—Sunset Express motor coach service commenced with extension of route No. 2 to Golden Gate Avenue and Taylor Street. Express service from Nineteenth Avenue to Van Ness Avenue.

November, 1946.—Inner tracks on Church Street, Market to Seventeenth Street and Twenty-fifth to Twenty-seventh Street replaced. Outer tracks Market Street to Sixteenth Street removed. Work performed under replacement job No. 1607.

November 5, 1946.—General election. Charter amendment approved amending section 151.3 fixing average of two highest wage schedules in other street railways in effect July 1 of each year as rate for Municipal Railway. Vote—Yes, 181,059; No, 55,557.

December 8, 1946.—Haight Street car house abandoned.

January 6, 1947.—Central control with radio station KCRJ inaugurated at the Geary Street car house.

January 9, 1947.—First three of forty electrical headway recorders in operation in Central Control. Total of twenty in operation on June 30, 1947.

March 10, 1947.—Land for new motor coach garage in block bounded by Beach, Stockton, North Point, and Powell streets purchased at cost of $183,400.

May 20, 1947.—Inner tracks on Market Street from Fremont Street to Eddy Street replaced under replacement job No. 1646M—contract No. 253.

June 9, 1947.—Street car service discontinued on line "E". Replaced by trolley coaches from Pierce and Union streets to Beale and Howard streets and by motor coaches from Pierce to Lyon Street.

July 20, 1947.—Complete conversion of street car line "E" to trolley coach operation and consolidation with trolley coach line "R". Operation from Lyon and Greenwich streets to Army and South Van Ness Avenue.

November 4, 1947. — General election. General Obligation bonds voted — $20,000,000. Municipal Railway Rehabilitation bonds, YES 181,047, NO 53,751. $2,200,000 Market Street Railway Debt Retirement bonds, YES 173,812, NO 57,486. $22,850,000 Street Reconstruction, Traffic Signals, and Track Removal bonds, YES 181,599, NO 49,932. $5,000,000 Parking Facility bonds, YES 162,821, NO 66,950. All approved by approximately three to one margin.

November 4, 1947.—General election. Charter amendment making mandatory retention of present and existing municipally owned cable car system approved. YES 169,464, NO 51,107.

November 4, 1947.—General election. Charter amendment allowing payment of the debt to the Market Street Railway Company out of proceeds of the $2,200,000 bond issue approved. YES 168,311, NO 56,576.

June 1, 1948.—Primary election. Bond issue in amount of $200,000 for purchase of the California Street Cable Railroad Company was defeated as the issue did not receive the necessary two-thirds vote of the electors. Vote: YES 131,689, NO 92,265.

June 7, 1948.—McAllister Street car house converted to motor coach terminal.

June 7, 1948.—The No. 5 McAllister and the No. 21 Hayes Street car lines were replaced by motor coaches.

June 7, 1948.—Construction of inner tracks on Market Street from Eddy Street to Valencia Street complete and outer tracks on Market Street abandoned.

July 4, 1948.—The No. 6 Haight-Masonic and the No. 7 Haight-Ocean street-car lines were converted to motor coach operation.

August 1, 1948.—The No. 22 Fillmore, the No. 25 Bryant-San Bruno, and the No. 4 Sutter-Sacramento street-car lines were wholly converted to motor coach operation, and the No. 3 Sutter-Jackson was partially converted to motor coach operation.

August 1, 1948.—Fillmore Street car house closed.

August 1, 1948.—Ocean bus yard opened as a motor coach terminal.

January 16, 1949.—The Nos. 9, 11, and 14 Mission Street car lines were wholly converted to motor coach operation.

January 16, 1949.—The No. 40 San Mateo street car line was abandoned, the last day of operation being January 15, 1949.

January 16, 1949.—The No. 22 Fillmore line converted from motor coach to trolley coach operation.

January 16, 1949.—Potrero street car house converted to trolley coach use and designated as the Potrero Trolley Coach Division.

January 16, 1949.—Fare rate increased from a 10 cent cash or $8\frac{1}{3}$ cent token rate to a straight 10 cent cash rate. Sale of metal tokens terminated. Accepted for use to March 15, 1949, and for cash redemption to April 15, 1949.

July 3, 1949.—The No. 1 Sutter-California, the No. 2 Sutter-Clement, the No. 3 Sutter-Jackson, and the No. 31 Turk-Balboa street car lines were wholly converted to motor coach operation.

July 3, 1949.—The "H" Van Ness-Potrero street car line was terminated at Army Street, the route south of Army Street taken over by the No. 25 Bryant-Bayshore motor coach line.

July 3, 1949.—The No. 5 McAllister, the No. 6 Haight-Masonic, the No. 7 Haight-Ocean, and the No. 21 Hayes lines were converted from motor coach to trolley coach operation.

July 3, 1949.—The No. 8 Market-Castro street car line was converted to trolley coach operation.

July 3, 1949.—Partial express service established on the Market Street street car lines "J," "K," "L," "M," and "N" by eliminating stops west of Twelfth Street with the exception of Duboce Avenue, Church Street, and Castro Street.

July 1, 1948, to July 3, 1949.—Changes in car lines and coach routes. See complete statement of all changes of car lines and coach routes made from July 1, 1948, to July 3, 1949, following section of the report captioned "Transportation and Schedule Departments."

SINGLE TRACK MILEAGE AND ROUND TRIP MILES OF STREETS TRAVERSED BY MOTOR AND TROLLEY COACHES

Owned and Operated (Including spurs, turnouts, sidings, and car house tracks)	June 30, 1949	July 3, 1949
Electric Street Car	120.510	87.625
Cable Car	6.792	6.792
Total Operated Track	127.302	94.417
Owned—Non-Operated		
Electric Street Car	111.066	143.951
Cable Car	0.051	0.051
Total Non-Operated Track	111.117	144.002
Total—Single Track Owned	238.419	238.419
Motor Coach Routes		
Round Trip Miles of Street Traversed	324.580	328.950
Trolley Coach Routes		
Round Trip Miles of Street Traversed	36.100	69.610
Total Coach Routes—Round Trip Miles of Street Traversed	360.680	398.560

Tunnels

Length of Twin Peaks Tunnel (Bore only, not including approaches) ..... 11,654.00 feet

Length of Twin Peaks Tunnel (Including approaches) ..... 11,925.00 feet

Length of Duboce Tunnel ..... 4,231.37 feet

Length of Duboce Tunnel (Including approaches) ..... 4,641.73 feet

Length of Stockton Street Tunnel (From portal to portal) ..... 910.06 feet